DOCUMENT RESUME

ED 248 007 PS 014 401

AUTHOR	Tucker, Jamie, Ed.
TITLE	Research in Action II National Conference Proceedings (Lubbock, Texas, February 9-11, 1983). Volume II.
INSTITUTION	Texas Tech Univ., Lubbock. Inst. for Child and Family Studies.
PUB DATE	Feb 83
NOTE	148p.
PUB TYPE	Collected Works - Conference Proceedings (021) -- Reports - Research/Technical (143)
EDRS PRICE	MF01/PC06 Plus Postage.
DESCRIPTORS	*Disabilities; Early Childhood Education; Emotional Response; *Empathy; Evaluation; Graphs; Hospitalized Children; Intervention; *Mathematics Skills; Motivation; Parent Attitudes; Play; Rural Urban Differences; Sex Differences; Special Education; *Staff Development; Staff Utilization; *Story Telling; *Teacher Education
IDENTIFIERS	Shadows

ABSTRACT

This conference program includes explanatory material and reprints 15 of the 43 papers presented in conference sessions. In addition to Rheta De Vries' keynote address--"Can Research Help Teachers Teach?"--research reports are published from four interest session tracks. Papers from the health/handicap track include Patricia Hutinger's "I Didn't Know I Knew So Much to Do What I Am Doing: Competency-Based Teacher Preparation for Early Childhood Handicapped Personnel"; Jeanette Jenkins, David R. Carson, and C. Bondred Stout's "The Development and Assessment of a Child Life Program on the Hospital Pediatric Ward"; and Ralph Hausman and Rubilee Nobel's "Developmental/Educational Assessment of Handicapped Children in Early Childhood (Preschool) Public School Programs." The early childhood track includes Hazel Marsicano's "Expressive Communication Responses of Young Children to Storytelling"; Barbara Gibson, Roy Moxley, and Kathy Blouiarz's "The Development of Math-Graphing and Charting Skills in Young Children"; Janice Strand's "Curriculum for Emphatic Enrichment"; and Mary Seay's "The Impact of Parent Attitudes on Children's Math Abilities." Six papers are published from the management strategies/staff development track: "Self-Assessment of Knowledge and Training Needs for Personnel Serving Preschool-Aged Handicapped Children: A Rural-Urban Comparison," by William Wachtel, Stephen Stile, and Sandra Abernathy; Gloria Galey's "Systems Simplify Service"; James Strickland's "You Gotta 'Catch Fire' before You Can 'Burn Out': Exploratory Research on Motivators for Training of Paraprofessional Preschool Classroom Personnel"; Stuart W. Reynolds' "Short-Term Training and Its Effect on Management Style in human Service"; Rick van den Pol's "Staff Utlization and Support System: A Low-Cost Alternative; and Robert Collier's "The Effects of Training Preschool Teachers in Techniques for Fostering Children's Play." David Shearer's report on the Early Intervention Research Institute is the only paper included from the special interest track. Also provided are names and addresses of the approximately 200 presenters, facilitators and cooperating agencies, and personnel of the Institute for Child and Family Studies. (CB)

ED248007

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☒ Minor changes have been made to improve reproduction quality.

- Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

Proceedings of
Research In Action II
Conference

February 9-11, 1983

Institute for Child and Family Studies

Texas Tech University

Lubbock, Texas

Volume II

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Mary Tom Riley/
Inst. for Child + Family Studies
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

PS 014401

RESEARCH IN ACTION II

National Conference

Sponsored by

Institute for Child and Family Studies
Texas Tech University
Lubbock, Texas

Mary Tom Riley, Ed.D
Director

Jamie Tucker
Conference Coordinator

Irma Quezada
Conference Facilitator

Conference Proceedings edited by Jamie Tucker

PS 014401

INTRODUCTION

The first RESEARCH IN ACTION Conference, held March 31 - April 2, 1982 provided a unique forum for researchers and practitioners to discover ways for utilizing research findings in service delivery to young children and their families. The response to this conference underscored the need for such a forum, and led to RESEARCH IN ACTION II.

RESEARCH IN ACTION II built on the foundation laid during the first conference and offered new opportunities for sharing research findings in meaningful ways. A cooperative effort initiated with the Department of Home and Family Life, College of Home Economics, Texas Tech University, enabled conference participants to attend not only RESEARCH IN ACTION II, but the "Social Influences on Development" Conference as well. Through this collaborative effort participants from both conferences were able to hear and interact with a variety of keynote speakers and special guests.

In building on the stated purpose of presenting current research and addressing practical application, RESEARCH IN ACTION II highlighted a panel of basic and applied researchers. These leaders addressed the need for closing the gap between basic research and application in direct service.

Interest sessions and other conference activities provided opportunities for such dialog to occur. The trend must continue. Researchers and practitioners must remove the barriers that traditionally have hampered useful communication about research needs and implementation of research findings. This is what RESEARCH IN ACTION is all about.

TABLE OF CONTENTS

INTRODUCTION. v

PROGRAM 1

PRESIDENTS OF MAJOR NATIONAL
EARLY CHILDHOOD ORGANIZATIONS 15

KEYNOTE SPEAKERS. 19

- * Ms. Lucy C. Biggs. 21
- * Dr. Michael Lewis. 21
- * Keynote Panel. 22
- * Dr. Rheta DeVries "Can Research Help Teachers Teach?" 24

COMPUTER FAIR. 37

INTEREST SESSIONS 43

Health/Handicap Track 47

- * "I Didn't Know I Knew So Much To Do What I Am Doing: Competency-Based Teacher Preparation for Early Childhood Handicapped Personnel". 49
  Dr. Patricia Hutinger

- * "The Development and Assessment of a Child Life Program on the Hospital Pediatric Ward" 53
  Dr. Jeanette Jenkins,
  David R. Carson, and
  C. Bondred Stout

- * "Developmental/Educational Assessment of Handicapped Children in Early Childhood (Preschool) Public School Programs" 69
  Dr. Ralph Hausman and
  Rubilee Nobel

Early Childhood Track 73

- * Expressive Communication Responses of Young Children to Storytelling". 75
  Dr. Hazel Marsicano

* "The Development of Math - Graphing and
Charting Skills in Young Children" 81
Barbara Gibson,
Roy Moxley, and
Kathy Blouiarz

* "Curriculum for Empathic Enrichment" 86
Janice Strand

* "The Impact of Parent Attitudes on Children's
Math Abilities" 91
Mary Seay

Management Strategies/Staff Development Track 97

* "Self-Assessment of Knowledge and Training
Needs for Personnel Serving Preschool-Aged
Handicapped Children: A Rural-Urban Comparison" 99
Dr. William Wachtel,
Dr. Stephen Stile and
Sandra Abernathy

* "Systems Simplify Service" 106
Gloria Galey

* "You Gotta 'Catch Fire' Before You Can
'Burn Out': Exploratory Research on
Motivators for Training of Paraprofessional
Preschool Classroom Personnel". 108
James Strickland

* "Short-Term Training and Its Effect on
Management Style in Human Service". 124
Stuart W. Reynolds

* "Staff Utilization and Support System:
A Low-Cost Alternative" 132
Rick van den Pol

* "The Effects of Training Preschool Teachers
in Techniques for Fostering Children's Play". 140
Dr. Robert G. Collier

Special Interest Track 147

* "Early Intervention Research Institute". 149
Dr. David Shearer

EVALUATION. 153
PRESENTERS. 157
FACILITATORS. 165
COOPERATING AGENCIES. 173
INSTITUTE FOR CHILD AND FAMILY STUDIES STAFF. 177

CONFERENCE OVERVIEW

All sessions will be held in the University Center, Texas Tech University, unless otherwise noted. (*)

Wednesday—February 9, 1983

9:00-12:00	COMPUTER FAIR	Coronado Room
12:00-5:00	REGISTRATION	Ballroom
1:30-2:45	OPENING SESSION	Ballroom
2:45-3:00	BREAK	
3:00-4:30	INTEREST SESSIONS —Health/Handicap Track —Early Childhood Track —Management Strategies/ Staff Development Track —Special Interest Track	Meeting Rooms
4:30-5:30	CONFERENCE WARM-UP/SOCIAL	Coronado Room

Thursday—February 10, 1983

8:00-5:00	REGISTRATION	Ballroom
8:30-11:45	INTEREST SESSIONS —Health/Handicap Track —Early Childhood Track —Management Strategies/ Staff Development Track —Special Interest Track	Meeting Rooms
11:45-1:30	LUNCH	
1:30-3:00	GENERAL SESSION	Ballroom
3:00-3:15	BREAK	
3:15-4:45	INTEREST SESSIONS —Health/Handicap Track —Early Childhood Track —Management Strategies/ Staff Development Track —Special Interest Track	Meeting Rooms
5:30-7:00	SOCIAL	*Civic Center Convention Complex Banquet Hall 1501 6th Street
7:00-8:30	GENERAL SESSION Panel—"Applied vs Basic Research"	

Friday—February 11, 1983

8:30-10:00	INTEREST SESSIONS —Health/Handicap Track —Early Childhood Track —Management Strategies/ Staff Development Track —Special Interest Track	Meeting Rooms
10:00-12:00	GENERAL SESSION WITH BUFFET BRUNCH	Ballroom
12:00 noon	CONFERENCE ADJOURNS	

DAY 1

WEDNESDAY—FEBRUARY 9, 1983

12:00-5:00	REGISTRATION	Ballroom
1:30-2:45	OPENING SESSION **Welcome and Introductions** Dr. Mary Tom Riley Director, Institute for Child and Family Studies Texas Tech University **Opening Remarks and Introduction of Speaker** Dr. J. Knox Jones, Jr. Vice President for Research and Graduate Studies Texas Tech University **Keynote Address** Ms. Lucy C. Biggs Associate Commissioner for Developmental Services Administration for Children, Youth and Families	Ballroom
2:45-3:00	BREAK	
3:00-4:30	INTEREST SESSIONS See Interest Session Schedule for Topics and Room Assignments	
4:30-5:30	CONFERENCE "WARM-UP" Social and Refreshments	Coronado Room

INTEREST SESSION SCHEDULE

WEDNESDAY, FEBRUARY 9, 1983

	HEALTH/HANDICAP TRACK	EARLY CHILDHOOD TRACK	MANAGEMENT STRATEGIES/STAFF DEVELOPMENT TRACK	SPECIAL INTEREST TRACK
3:00-4:30	"The Use of Service Club Volunteers to Identify Preschool Children with Hearing, Speech, and/or Language Problems"	"Use of Microprocessor Based Curriculum—CAPER—to Document Child Progress and Intervention Efficacy"	"Comparison of In-Service Training Needs of Rural and Urban Teachers of Preschool Handicapped Children"	"The Use of Micro-Computers in Preschool Education"
	Dr. Barbara Hanners, Dr. Timothy B. Harris Lezlie Pearce-Hopper Mississippi University for Women Columbus, Mississippi	Nina M. Carran Western Hills Area Education Agency Sioux City, Iowa	Dr. William Wachtel El Paso Public Schools El Paso, Texas Dr. Stephen Stile New Mexico State University Las Cruces, New Mexico	Dale Smith Texas Tech University Lubbock, Texas Craig Reitan Unisource, Inc. Lubbock, Texas Barbara Thompson Texas Instruments, Inc. Lubbock, Texas Richard Wuest Computerland Lubbock, Texas Dr. La Mont Johnson Texas Tech University Warren Havens Radio Shack Lubbock, Texas L. Chris Seil Lubbock Independent School District Lubbock, Texas
	ROOM 208	LUBBOCK ROOM	ROOM 207	BLUE ROOM

Continued

	HEALTH/HANDICAP TRACK	EARLY CHILDHOOD TRACK	MANAGEMENT STRATEGIES/STAFF DEVELOPMENT TRACK	SPECIAL INTEREST TRACK
3:00-4:30 (cont.)	"Planning and Conducting a Health Fair" Johnette Mihatsch, Therese Freeman Tri-County Community Action Agency Center, Texas Gail Beil HUDCO Marshall, Texas Ella Perry Tyler ISD Tyler, Texas Charlotte Stokes Community Action of Nacogdoches Nacogdoches, Texas Faye Warmsley Rusk-Cherokee Community Action Program Jacksonville, Texas CORONADO LOUNGE	"Expressive Communication Responses of Young Children to Storytelling" Dr. Hazel Marsicano West Virginia University Morgantown, West Virginia MESA ROOM	"Systems Simplify Service" Gloria Galey Lubbock Independent School District Lubbock, Texas ROOM 209	"Sticking with It: What a Difference It Makes" Tim Young Texas Tech University Lubbock, Texas ROOM 204
4:30-5:30	Conference "Warm-Up" Social CORONADO ROOM			

DAY 2

THURSDAY—FEBRUARY 10, 1983

8:00-5:00	REGISTRATION	Ballroom
8:30-11:45	INTEREST SESSIONS See Interest Session Schedule for Topics and Room Assignments	
11:45-1:30	LUNCH	
1:30-3:00	GENERAL SESSION **Welcome** Dr. J. Knox Jones, Jr. Vice-President for Research and Graduate Studies Texas Tech University **Introduction** Dr. Connie Steele Chairperson, Department of Home and Family Life College of Home Economics Texas Tech University Dr. Paul McGhee Associate Professor Department of Home and Family Life College of Home Economics Texas Tech University **Keynote Address** "The Socialization of Emotional Expression in Children" Dr. Michael Lewis Rutgers University	Ballroom
3:00-3:15	BREAK	
3:15-4:45	INTEREST SESSIONS See Interest Session Schedule for Topics and Room Assignments	
5:30-7:00	SOCIAL AND REFRESHMENTS	*Civic Center Convention Complex Banquet Hall 1501 6th Street

7:00-8:30 GENERAL SESSION

*Civic Center
Banquet Hall

Remarks and Introductions
Dr. Paul McGhee
Department of Home and Family Life
College of Home Economics
Texas Tech University

Keynote Panel:
"APPLIED VS BASIC RESEARCH"
Ms. Lucy C. Biggs, Administration for Children, Youth and Families, Washington, D.C.
Dr. Bettye Caldwell, University of Arkansas, Little Rock, Arkansas
Dr. Nancy Eisenberg, Arizona State University, Tempe, Arizona
Dr. Michael Lewis, Rutgers University, New Brunswick, New Jersey
Dr. Lillian Troll, Rutgers University, New Brunswick, New Jersey
Dr. David Weikart, High/Scope Educational Research Foundation, Ypsilanti, Michigan

INTEREST SESSION SCHEDULE

THURSDAY, FEBRUARY 10, 1983

	HEALTH/HANDICAP TRACK	EARLY CHILDHOOD TRACK	MANAGEMENT STRATEGIES/STAFF DEVELOPMENT TRACK	SPECIAL INTEREST TRACK
8:30-10:00	"I Didn't Know I Knew This Much To Do What I'm Doing: A Study of Teacher Competencies for Early Childhood" Dr. Patricia Hutinger Western Illinois University Macomb, Illinois ROOM 207	"Assessment of Conservation in Four, Five and Six Year Olds" Dr. Connie Steele, Texas Tech University Lubbock, Texas Betty Gaines Midland College Midland, Texas BLUE ROOM	"Exploratory Research on Motivators for Training of Paraprofessional Preschool Classroom Personnel" James Strickland Child, Inc. Austin, Texas MESA ROOM	"Early Intervention Research Institute" Dr. Glendon Casto, Dr. David Shearer Utah State University Logan, Utah LUBBOCK ROOM
	"The Development and Assessment of a Child Life Program on the Hospital Pediatric Ward" Dr. Jeanette Jenkins, David K. Carson and C. Bondred Stout Texas Tech University Lubbock, Texas SENATE ROOM	"The Development of Math-Graphing Skills Using Color Cubes and Charts" Barbara Gibson West Virginia University Morgantown, West Virginia ROOM 209	"Instructional Technology Needs in Rural Special Education Programs" Dr. Stephen Stile Dr. Jack Cole New Mexico State University Las Cruces, New Mexico Dr. Paul Wirth Los Lunas State Training School Los Lunas, New Mexico ROOM 208	
	"Evaluation and Treatment of Handicapped Children from a Pediatric Standpoint" Dr. Stephen G. Maddox Child Study Center Fort Worth, Texas CORONADO LOUNGE			
10:00-10:15	BREAK			

	HEALTH/HANDICAP TRACK	EARLY CHILDHOOD TRACK	MANAGEMENT STRATEGIES/STAFF DEVELOPMENT TRACK	SPECIAL INTEREST TRACK
10:15-11:45	"How to Increase the Effectiveness and Evaluate the Results of a Health Fair" Maria de los Angeles V. Dumont Community Development Institute Albuquerque, New Mexico BLUE ROOM	"Implications of Research in Fantasy Play Behavior and Divergent Thinking Abilities of Kindergarten Children" Dr. Mary Ann Waldon Texas Southern University Houston, Texas CORONADO LOUNGE	"Short-term Training and Its Effect on Management Style in Human Services" Stuart Reynolds Texas Tech University Lubbock, Texas ROOM 209	"Dealing with the Application of Research: Now That We Have This New Information, What Do We Do With It?" Dr. Jennie Klein Bethesda, Maryland LUBBOCK ROOM
	"Learning by Doing Through a Thematic Integrated Curriculum" Dr. Carolyn Schluck The Florida State University Tallahassee, Florida SENATE ROOM	"Curriculum for Empathic Enrichment" Janice Strand Roswell, New Mexico ROOM 207		"Working with Teenage Parents: A Developmental Approach" Maryann O'Leary Texas Tech University Lubbock, Texas ROOM 208
	"Current Issues in Family Practice for Hispanic Families" James Robins, M.D. Rafael Garcia, M.D. Cesar Cantu, M.D. Michael J. Bourgeois, M.D. Rudy Arredondo, M.D. Texas Tech University School of Medicine Lubbock, Texas Father Curtis Halfmann St. Joseph's Church Slaton, Texas Ray Santos, M.D. Lubbock, Texas MESA ROOM			
1:30-3:00	GENERAL SESSION			
3:00-3:15	BREAK			

	HEALTH/HANDICAP TRACK	EARLY CHILDHOOD TRACK	MANAGEMENT STRATEGIES/STAFF DEVELOPMENT TRACK	SPECIAL INTEREST TRACK
3:15-4:45	"Operational Methods of Screening the Visual Acuity of Multi-Handicapped School Children" Grayce Xenia O'Chuk LaVerne, California ROOM 207	"Physical Knowledge Activities: Educational Implications of Piaget's Research and Theory" Dr. Rheta DeVries University of Houston Houston, Texas SENATE ROOM	"Staff Utilization and Support System: A Low-Cost Alternative" Rick van den Pol University of Montana Missoula, Montana ROOM 209	"Using the Results of Longitudinal Studies in Early Childhood" Dr. David Weikart High/Scope Educational Research Foundation Ypsilanti, Michigan LUBBOCK ROOM
	"The Role of the Family in Maintaining Handicapping Conditions" Thomas Griffin Community Development Institute Albuquerque, New Mexico BLUE ROOM	"SLIP—A Training Design for Speech/Language Improvement Program" Marilyn J. Bloom-Horn Texas Tech University Lubbock, Texas CORONADO LOUNGE	"Use of Microcomputers for Preschool Caregivers" Dale Smith Texas Tech University Lubbock, Texas Bill McLucas Wang Laboratories Lubbock, Texas Richard Wuest Computerland Lubbock, Texas Sam Scheef Agriplex Computers Lubbock, Texas MESA ROOM	"The San Felipe-Del Rio Head Start Research Project" Dr. Alfredo Flores, Vincent Taylor Texas Tech University Lubbock, Texas Arnoldo F. Benavides Pan American University Edinburg, Texas Eloy Musquiz San Felipe-Del Rio ISD Del Rio, Texas ROOM 208

DAY 3

FRIDAY—FEBRUARY 11, 1983

8:30-10:00 INTERESTED SESSIONS

See Interest Session Schedule for Topics
and Room Assignments

10:00-12:00 GENERAL SESSION — Ballroom

Remarks
Dr. Mary Tom Riley
Director, Institute for Child and Family Studies
Texas Tech University

Introduction
Mr. Tommy Sullivan
Regional Program Director
Region VI Administration for Children,
Youth and Families

Address
"Can Research Help Teachers Teach?"
Dr. Rheta DeVries
University of Houston

Closing Remarks
Dr. Mary Tom Riley

FRIDAY
Feb.
11

INTEREST SESSION SCHEDULE

FRIDAY, FEBRUARY 11, 1983

	HEALTH/HANDICAP TRACK	EARLY CHILDHOOD TRACK	MANAGEMENT STRATEGIES/STAFF DEVELOPMENT TRACK	SPECIAL INTEREST TRACK
8:30-10:00	"Helping Step-Parents Minimize Behavioral Problems in Children" Thomas Griffin Community Development Institute Albuquerque, New Mexico ROOM 209	"Group Games: Educational Implications of Piaget's Research and Theory" Dr. Rheta DeVries University of Houston Houston, Texas LUBBOCK ROOM	"The Effects of Training Preschool Teachers in Techniques for Fostering Children's Play" Dr. Robert G. Collier Western Illinois University Macomb, Illinois MESA ROOM	"The Use of Make-Believe Play to Increase Peer Interaction" Nancy Benz Day Care Association of Lubbock Lubbock, Texas CORONADO LOUNGE
	"Developmental Educational Assessment of Handicapped Children in Early Childhood (Pre-school) Public School Programs" Dr. Ralph M. Hausman and Rubilee Nobles Ector County Independent School District Odessa, Texas BLUE ROOM	"The Impact of Parent Attitudes on Children's Math Abilities" Mary Seay and Manda Lively Education Service Center Region VI Huntsville, Texas ROOM 208	"Is 'SUCCESS' Successful? A Review of the SUCCESS Screening Instrument" Dale Smith, Regina Swearengen and Amy Jones Texas Tech University Lubbock, Texas ROOM 207	"An Eighties Era Examination of the Evidence Embedded in the Data on English Usage by Black Americans: Educational Issue Imperatives" Dr. Anita P. DeFrantz University of San Francisco San Francisco, California SENATE ROOM

Research in Action II...
Presidents of Major National Early Childhood Organizations

The first RESEARCH IN ACTION Conference provided a forum for leaders of major national early childhood organizations to respond to issues of concern in the field. It was the first time that these leaders had had the opportunity to meet in panel and discuss collaboration and cooperation in their efforts for young children and their families.

Following RESEARCH IN ACTION I, this austere group -- with some changes in personnel brought about by rotation in office -- met twice more to continue their collaborative efforts. The second RESEARCH IN ACTION Conference, held February 9-11, 1983, offered a fourth opportunity for these leaders to come together. Although some of them appeared on the RESEARCH IN ACTION II program, others came solely for the purpose of meeting with their colleagues to further their endeavors. RESEARCH IN ACTION II was pleased to host them.

PRESIDENTS OF MAJOR NATIONAL EARLY CHILDHOOD ASSOCIATIONS

SARAH GREENE
President
National Head Start
Association

DR. BETTYE CALDWELL
President
National Association for
the Education of Young
Children

JAMES STRICKLAND
President
Day Care Council
of America

DR. LYNDAL BULLOCK
President
Council for
Exceptional Children

DR. GLORIA ZAMORA
President-elect
National Association
for Bilingual Education

BEA GOLD
President-elect
Division for Early
Childhood
Council for
Exceptional Children

EVELYN MOORE
Executive Director
National Black Child
Development Institute, Inc.

JOHN REESE
Immediate Past President
National Head Start
Association

DR. NANCY QUISENBERRY
Chairman, Foundation Committee
Association for Childhood
Education International

KEYNOTE SPEAKERS

Research in Action II...
Keynote Speakers

MS. LUCY C. BIGGS
Associate Commissioner for
Developmental Services
Administration for Children, Youth, and Families
Office of Human Development Services
Department of Health and Human Services

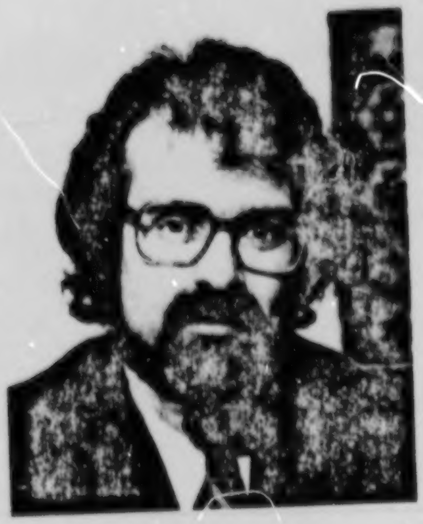
Wednesday, February 9, 1983
University Center Ballroom
1:30 p.m.

Opening Keynote Address

DR. MICHAEL LEWIS
Rutgers University

Thursday, February 10, 1983
Ballroom, University Center
1:30 p.m.

"The Socialization of Emotional
Expression in Children"



DR. RHETA DEVRIES
University of Houston

Friday, February 11, 1983
Ballroom, University Center
10:00 a.m.

"Can Research Help Teachers
Teach?"

A highlight of RESEARCH IN ACTION II was the keynote panel. This panel was composed of applied and basic researchers from across the country. Six nationally recognized leaders addressed the need for practical application of current research in early childhood.

The panel represented a variety of interests and backgrounds --

Commissioner Lucy C. Biggs, from the Department of Health and Human Services, represented the federal position, but retained the local perspective from her earlier work with Head Start in Tennessee;

Dr. Bettye Caldwell, a Donaghey Distinguished Professor of Education, has long been noted for her excellent research and commitment to early childhood;

Dr. Nancy Eisenberg, from Arizona State University, spoke of the pro-social influences on development, including infancy role taking, and how influences can be addressed through research and application;

Dr. Michael Lewis, from the Department of Pediatrics at Rutgers Medical School, brought the developmental-psychological point of view to the panel;

Dr. Lillian Troll,also from Rutgers University, addressed the issues from another perspective, that of the aged;

Dr. David P. Weikart, an outstanding and respected researcher for many years, addressed the longitudinal aspect of research and how these results might impact in direct service.

The panelists spoke from their own areas of expertise and interest, but all came to the same conclusion: researchers and practitioners must find ways to talk to each other and to utilize the information available through research in order to provide healthy productive early childhood experiences for children.

KEYNOTE PANEL—"APPLIED VS BASIC RESEARCH"

MS. LUCY C. BIGGS
Associate Commissioner for
Developmental Services, Administration
for Children, Youth and Families,
Office of Human Development Services,
Department of Health and Human Services
Washington, D.C.

DR. BETTYE CALDWELL
University of Arkansas
Little Rock, Arkansas

DR. NANCY EISENBERG
Arizona State University
Tempe, Arizona

DR. MICHAEL LEWIS
Rutgers University
New Brunswick, New Jersey

DR. LILLIAN TROLL
Rutgers University
New Brunswick, New Jersey

DR. DAVID P. WEIKART
President, High/Scope
Educational Research Foundation
Ypsilanti, Michigan

CAN RESEARCH HELP TEACHERS TEACH?

Dr. Rheta DeVries
University of Houston
Houston, Texas

Closing Keynote Address
Friday, February 11, 1983
10:00 a.m.

The conveners and participants in this conference have courageously focused on the issue of how basic and applied research can be useful to educators at the level of practical action in the classroom. I call it a courageous effort because of the large gap that exists between research and practice. This gap seems to me to result from two factors. The first is that teachers are looking for activities, not research. For many reasons, it is not immediately obvious that research can help them with what they have to do. Bettye Caldwell has discussed what is one of the most serious obstacles -- the vocabulary problem. Researchers don't speak a language that makes sense to teachers. David Weikart has noted the realistic fact that the time frame from initial research idea to knowledge deserving of practical use is incredibly long -- his estimate of 12 years is, I think, optimistic. Too often, researchers urge a premature application of their research. It takes a lot of courage to refuse premature applications. What I didn't hear in the conference symposium was what I feel is a necessity to intervene a special kind of non-empirical or non data-collecting research between the basic research and empirical applied research. This is for the purpose of translating basic research into valid application. Researchers are often naive and limited in their ability to make the translation, and when they do, the result is unsuccessful. Therefore, the second factor behind the research-practice gap is that, in truth, most research (and I'm speaking especially about psychological research) does not offer teachers any real help.

Researchers and practitioners have very different priorities. The difference in priorities is legitimate, but often results in two unfortunate attitudes that I will call the researcher's fallacy (or the psychologist's fallacy) and the practitioner's fallacy. Kohlberg has talked about the "psychologist's fallacy" as the assumption that the variables important for psychologists to research are the important variables for teachers to think about, or that laws or generalizations which are valid conclusions about research data provide a valid foundation for educational practice. One form of the psychologist's fallacy is described by Kohlberg as a one-way street between theory and practice in which psychologists design an educational program on the basis of a particular theory without a thorough understanding of the teacher's perspective. The second fallacy is what I call the "practitioner's fallacy." This fallacy is to assume that research and theory are of little importance to the practitioner. This is exemplified, for example, by the attitude that "I don't care about research or theory. I care about what works." This attitude ignores the fact that every educational practice reflects underlying assumptions about the nature of learning and development -- assumptions that researchers are in the business of testing. Theory is inescapable. Notice that here I have inserted a new term into our discussion of the relationship between research and educational action -- theory. What I want to talk about is the necessity for a two-way-street between research-based psychological theory and educational practice. This is a rather personal account of my particular effort to travel the two-way street between Piaget's theory and practices in early education.

Research on Cognitive Development

Let me begin by saying that I was a teacher before I was a researcher. When I left teaching and began laboratory research on cognitive development in children, I thought I was making a complete career shift, and I was more than a little relieved to leave behind my self-doubts and uncertainties about how to be a good teacher. I certainly was *doing* something different and *thinking* about different things as a researcher than as a teacher. For example, the school systems in which I worked had me thinking about how to teach reading, literature, grammar, history, current events, writing, spelling, and arithmetic. The teacher's guidebooks told me more specifically what to do -- how to conduct a reading class, make bulletin boards, demonstrate place value with toothpick bundles of tens and hundreds, etc. As a researcher, in contrast, I was entering the mind of the child, inspired by Piaget's research and theory. For example, Larry Kohlberg and I put Piaget's conclusions about how children think to a stringent test. We devised modifications of some of Piaget's tasks in an effort to demonstrate more persuasively that children really do experience the world differently. Just to give one example, I used M&M's to examine children's ability to conserve number. In my task, two pizza plates were presented, one having five M&M's in a short line, and the other having six in a longer line. Children were easily able to point to the row of six when I asked which had more to eat. Then the row of six was arranged in a row shorter than five, and the children were told they could take the row with more if they could correctly point to it. The thinking behind these procedures was that if children in such a situation pick the *smaller* quantity, surely the skeptics must admit that the failure to conserve quantity is really how the children think. In that study and in a second which I conducted, Piaget's findings were confirmed. In my study, of high-IQ five-year-olds, over 60% took the longer row of five, and of average-IQ children, half the six and seven year-olds failed to conserve. It amazed me to see so many children count the six M&M's, then the five, yet still maintain that the longer row of five had more to eat. One bright nonconserving kindergartner (who was almost six years old) did not count, but was encouraged at the end to do so. When she counted, she was a bit conflicted and commented, "This one (six) *should* have more because it's six and this has five, but this (five) has more because it's spreaded out." She seemed highly aware of the "moreness" of the *number* six, and I thought she might then change her mind and conserve. So I gave her another chance and asked, "So which has more candy to eat?" and she said, "I would pick the plate with five." For her, six was more than five only when she counted, what really "counted" in determining quantity was the amount of space occupied!

In another study, I attempted further to explore Piaget's view that children's "incorrect" ideas about the world reflect a unique and different subjective experience, and that they fail to make the distinction between the apparent and the real. I wondered whether the phenomenon of nonconservation of properties of inanimate objects had any parallel with the way in which children thought about the characteristics and identify of living creatures. So, I trained a reluctant, but obliging black cat named Maynard to wear a ferocious-looking dog mask and a benign rabbit mask. Then I interviewed children from three to six years about whether the identity changed when the appearance changed. Let me quote in part from an interview with Mark, a high-IQ boy of three years and eight months. He first was invited to pet the cat and did so fearlessly and with great affection. Then I screened the cat's head, and told Mark to watch the animal's tail (so he would know I was not simply putting away one animal and taking out another). Presenting the cat with rabbit mask, I said:

> (Look, it has a face like a rabbit. What is this animal now?) Rabbit (smiles, draws feet up onto seat of chair). (How can you tell?) (Laughs) Hi, rabbit. (How can you tell he's a rabbit?) He's a bunny rabbit! Hi! Hi! Hi! . . . . (Is he a real rabbit?) Yes. (What happened?) Make him out a cat-a dog--now. (Could I make him a dog?) Yes. . . . Make him out something else. . . . Make him out a cat again . . . (You know, cats and dogs have different kinds of insides--different bones and stomachs. What kind of insides does this animal have? Does he have a cat's bones and stomach or a rabbit's bones and stomach?) He has a little baby rabbit into there. When you open him up, you'll see. (Can he hop?) Hop. Hop, rabbit. He don't wants to hop. Hop, please. Hop. Hop for her. He'll hop for you later. (DeVries, 1969, pp. 14-16)

This type of response was given by all the three-year-olds, 80% of the four-year-olds, almost 40% of the five-year-olds, and even 25% of the six-year-olds.

These studies are only a few of many in which researchers keep coming up with the same result. No matter what the content domain, young children think in ways that are qualitatively different from the way in which older children and adults think. Piaget's demonstration of stages in children's intellectual development is significant for educators because it indicates that children construct their own knowledge, and that they learn many things we do not teach them.

Three Educational Translations of Piaget's Theory

The problem for the practitioner is to figure out what all this implies for child rearing and education. Preschool educators have struggled for a number of years with this question. It is a difficult one because Piaget's research was not research on learning, and his theory is not a theory of teaching. It is thus not surprising that different efforts to answer the educational question have produced different versions of "Piagetian" education. The three principal versions seem analogous to three ways of translating one language into another--global translation, literal translation, and free translation. I would like to discuss these as an aid to our thinking about the general relation between other research and other theories.

Global translation of Piaget's work into educational language is a simplification into vague generalities. That is, certain very general aspects of the theory are loosely matched with certain existing educational objectives or practices. For example, Piaget's emphasis on action is cited as justification for 1) "hands-on experiences", 2) "learning by doing", or 3) "play". Such a translation is correct at this level of generality. Its shortcoming, however, is that with only these generalities in mind, it fails to provide guidelines for deciding which specific activities and ways of teaching are better than others. Unfortunately, this kind of imprecise translation has led to many instances of pasting a "Piaget label" on practices that are inconsistent with the theory. For example, the child development tradition in early education has for a long time advocated active methods of education, and welcomed Piaget's work as providing a new justification for the value of play. However, by keeping the translation at this global level, child development educators have failed to recognize contradictions between Piaget's unique notion of action and many of their intuitive rationales and practices. To give a more specific example, child-development texts recommend the teaching of many science concepts that are inaccessible to the child whose capacity for logical reasoning is dependent on what is observable to him. One such concept is that "fire needs air to burn (Hildebrand, 1976, p. 206)." Teachers are told to try to teach this by showing children that the flame goes out when a glass is put over a candle. Because young children cannot reason as we can about the nonobservable, such teaching fails to communicate the concept. Such teaching also does little or nothing to help the child develop his intellectual instrument through its exercise--because there is so little content he can think about in this activity.

The inadequacy of the global approach to translating Piaget's theory is, therefore, that vague generalities can be used indiscriminately to justify almost any practice. This translation is not so much a translation of Piaget's theory into practice, as a translation into another theory--a diluted version in which global similarities mask differences. The problem, then, is how to differentiate our global translation in order to discriminate, for example, between "hands-on" activities that contain possibilities for real experimentation and construction of new relationships, and those in which such possibilities are limited.

Literal translation of Piaget's work into educational language is simply a direct transfer or application of parts of his research and theory to teaching. Literal translations place the emphasis on the structural aspects of Piaget's theory--that is, on the stages, and on the tasks with which stages were demonstrated. Preoccupation with Piaget's stages led to the preschool objective of moving children from the preoperational level to the stage of concrete operations. Some educational efforts centered on teaching children the Genevan tasks, or, without teaching tasks specifically, on trying to teach the mechanics of concrete operational reasoning.

Translation by transfer is problematic because even such a rich description of stages as Piaget's has at least three limitations from the educational perspective. First, the stages in the tasks are not stages in nature. They are descriptions of the results of development and do not in themselves tell us how one gets from one stage to the next. This is what teachers must know. To focus on the stages is to miss the main theme of Piaget's theory which deals with the process of development. A second limitation is that the description of stages presents a picture of changes that occur so gradually over several years that it is difficult to see how these insights should inform teaching at a particular moment. Third, although the Genevan tasks situations (such as conservation) were useful in demonstrating the existence of stages, most do not meet theory-based criteria for good educational activities.

Here, let me insert a general comment about all research applications to practice. If basic research and the theory it involves has any valid practical use (and as I said, a lot does not), an intervening kind of research must be done in many cases to find out in what form the basic research can be sensibly translated. Piaget was well aware of this and wisely refrained from saying very much about education. He knew that another research step had to be taken, as expressed in the last paragraph of his book on moral judgment. He said,

> But pedagogy is very far from being a mere application of psychological knowledge. Apart from the question of the aims of education, it is obvious that even with regard to technical methods it is for experiment alone and not deduction to show us whether methods such as that of work in groups and of self-government are of any real value. For, after all, it is one thing to prove that cooperation in the play and spontaneous social life of children brings about certain moral effects, and another to establish the fact that this cooperation can be universally applied as a method of education. This last point is one which only experimental education can settle. Educational experiment, on condition that it be scientifically controlled, is certainly more instructive for psychology than any amount of laboratory experiments, and because of this experimental pedagogy might perhaps be incorporated into the body of the psycho-sociological disciplines. But the type of experiment which such research would require can only be conducted by teachers or by the combined efforts of practical workers and educational psychologists. And it is not in our power to deduce the results to which this would lead. (Paiget, 1932, p. 406)

Such research does not necessarily have to involve quantitative data at first. An example of how this kind of research must intervene between basic and empirical applied research, let me give you a few examples. Connie Kamii and I tried to travel the 2-way street between 0 and practice in research with 0 and practice in research with classroom teachers.

We took Piaget's emphasis on the importance of action in development to derive four criteria for good physical-knowledge activities involving the movement of objects. These are:

1. The child must be able to produce the movement by his own action.
2. The child must be able to vary his action.
3. The reaction of the object must be observable.
4. The reaction of the object must be immediate.

Consider the differences between these kinds of activities and conservation tasks. If we agree with Piaget that the child constructs knowledge by abstracting from her experience the sense as *she* interprets it, it makes no sense to try to teach tasks or ideas that are inaccessible to her. Conservation, for example, is inaccessible to the nonconserver because there is no way for the child to make the invariance conclusion through his own observation and physical action on objects. It is a deduction. Invariance is not observable. Therefore, a focus on Genevan stage structures is inadequate for the educator who must be concerned with their roots and connections in experience--with the ways in which the child reasons in the process of moving toward operational thought. To the teacher of children whose thought is preoperational, the lofty aim of *concrete* operations is (excuse the pun) of little *concrete* help. While it may be appropriate for *psychologists* to concern themselves with stages, *educators* cannot stop there. A focus on stages--on how children will think in the future--can even create an obstacle to planning educational intervention in terms of how children are thinking in the present.

The inadequacy of the literal approach to educational translation is that the transfer of research tasks and structural stages to objectives, activities, and methods of teaching, contradicts the constructivist aspect of Piaget's theory. Teaching informed by Piaget's constructivism is centered on trying to figure out how children are reasoning, and to fostering the child's spontaneous mental efforts in activities that intrigue him to succeed and to understand.

I would like to call to your attention what is I think a useful distinction to make between "tasks" and "activities". By "task", I refer to situations in which the child is asked to think about the teacher's preoccupation. The child's reason for doing a *task* is to please the teacher, avoid displeasure, etcetera. In an "activity", the child pursues his own preoccupations. The child's reason for engaging in an activity is to figure out how to achieve some effect that intrigues him or her. It is not tasks but activities that usually stimulate intensive spontaneous interest and mental engagement and the real exercise of intelligence. It's what I think Piaget meant when he said educators must appeal to children's spontaneous activity. The challenge is to create activities in which what they are trying to do makes sense to children.

Free translation of Piaget's theory into educational language is a process of elaborating practices that preserve the spirit of the theory. The planning and evaluation of classroom activities is guided by observation and psychological analysis of children's activity.

In relation to literal translation, free translation represents a shift in emphasis from stages to constructivism. This shift reflected a realization that for Piaget, the significance of the stages lay not in the structures themselves, but in their functional, or constructivist implications. That is, the demonstration of stages indicated that children make their own sense out of their experience--and construct many "wrong" ideas on the way to knowledge adults consider correct. Free translation emphasizing the constructivist aspects of Piaget's theory led Kamii and me to state objectives not in terms of stages, but in terms of: 1) the exercise of moral and intellectual autonomy, 2) decentering and coordination of perspectives, and 3) the exercise of initiative in purposeful activities that inspire new constructions. We tried to operationalize Piaget's notion of "active methods" of education suited to the mind of the child. We did that with our qualitative classroom research on physical-knowledge activities and group games, and by trying to clarify how Piaget's theory builds on the child-development tradition by adding, eliminating, modifying, and refining objectives and activities.

Beyond Qualitative Research

Having made some progress with qualitative classroom research, I took stock and asked myself "What's the next step"? Three problems were uppermost in my mind.

The first problem was the result of observing difficulties teachers had in understanding our approach. I often had the painful experience of presenting our ideas to teachers only to find when I visited their classrooms that their efforts to put them into practice were not at all what I had in mind. Constructivism applies not only to children! Teachers go through "stages" of wrong constructions. The chief difficulty was how to recognize constructive activity in classroom life. I found physical action was often considered enough, never mind the mental action behind it--or, too often, the lack thereof. To put it another way, how do you know the difference between activity that is adaptation--that is, an effort to comprehend--and activity that is mere amusement? How do you evaluate whether there is a mix of interest and intellectual activity that is truly contributing to development? This concern arose partly out of frustration with the vagueries of rhetoric found in all statements of objectives--including our own. If the active objectives I mentioned as our free translation are not understood in terms of their rootedness in Piaget's theory, they can easily be assimilated to methods that are active only in the physical sense. Moreover, such objectives could just as well have come from Dewey or Montessori. And they could just as easily lead to the project method, the Montessori method, or the Bank Street, High/Scope or Kamii-DeVries approach. Many different avenues may be paved with the same rhetoric. We must beware.

The second problem was the rather adversarial relations into which "Piagetian" educators fell, making different translation of the theory into practice. I agree with Dave Wiekart when he says that his Piaget-based program, although significantly different from our own, is in the same ballpark when compared, for example, with behavioristic approaches such as Distar. But surely we must move beyond our present state of juxtaposed opinions to further research to bring a better integration. I do think progress has been made, but I also think we must be more conscious of the different psychological experiences children have in different programs, and that we must do the kind of research that will help us better understand the different impacts on children's development.

The third problem I worried about resulted from a rather long-standing debate with Larry Kohlberg who chided me for many years for not incorporating into curriculum evaluation my earlier work with Piaget-type cognitive tasks. I resisted this, saying that these tasks would not reflect my most central educational aims. But good friends don't let one off the hook so easily! He argued that to deny the aim of concrete operations was to rob the rationale of what is uniquely Piagetian. Although I had not denied the importance of operational development--and one indirect aim was certainly to promote development--I was challenged to think more about how to bridge the gap between the underlying or long-term goal of operational reasoning and the more immediate aims of the classroom teacher. All this is to say that after resisting for the umteenth time Larry's pressure, I granted that he was right about one thing. We must keep a clear connection to the structural stages. However, I still maintained that neither the broad stages nor the specific stages on tasks offer much direct help to teachers. So what do we do with the stages? What is there beyond the rhetoric of generalities and vague long-term goals? This debate prodded me into concluding that what teachers need are not descriptions of stages on Genevan tasks, but descriptions of developmental levels in classroom activities, justified on the basis of theory and research. So far, we have only a little of this--stages in representational drawing, in pretend play, and maybe blocks. So, the upshot of all this agonizing is that I have defined a new research direction. I have three aims:

1. To try to define developmental levels that teachers can see in classroom activities;
2. To describe these in terms of "marker behaviors" and to discuss their significance to help teachers think about children's thinking and evaluate developmental progress.
3. To study observable changes in children's reasoning over time in classroom activities.
4. To move toward the kinds of developmental assessments that will enable us to move beyond popularity contests and assertions of opinion about what is the best kind of translation of theory into practice.

As the first content domain in which to begin this research, I chose shadow play. Life circumstances prevented beginning this research in a program setting specifically oriented to education informed by Piaget's theory. Otherwise, I might have begun right away with classroom activities. Since I couldn't do that, I devised a situation between a task and an activity. It was a task in the sense that I asked each child one at a time to do me the favor of thinking about certain questions that preoccupied me. Thus, from the child's point of view, the reason to become engaged with me in questions about shadows was exterior to his or her personal concerns. My shadows situation was an activity in the sense that I tried to present questions in a way that might arouse the child's own preoccupation and produce spontaneous experimentation. Piaget's work inspired me to first analyze the shadow phenomena theoretically and from the perspective of the child's experience.

Shadow play is an intriguing type of physical-knowledge activity that shares elements of the two categories of physical-knowledge activities--that is, those that involve *movement* of objects and those that involve *changes* in objects. In playing with shadows, the child's actions result in movement and changes that are due more to the nature of the "object" than to the child's actions. That is, shadow play is different from physical-knowledge activities involving mechanics because the same action of the child does not always lead to the same result. For example, rolling a ball down an incline gives the same type of reaction to observe each time. However, walking up to one wall may produce a shadow while walking up to another wall does not. Shadow play is also different from the category of physical-knowledge activities involving *changes* in objects. For example, in mixing paint or making applesauce, it is the interaction of the objects that is most directly responsible for the observable reactions. However, in shadow play, action does not produce changes in the *substance* of shadows, but changes are observable in many characteristics such as size, shape, location, intensity, and appearance and disappearance. Shadow phenomena challenge the child to construct complex relationships among the light source, the screen on which the shadow falls, and the object casting the shadow. Since shadows are a part of every child's experience, and since they lend themselves to spontaneous experimentation that is not limited to the classroom, I thought they might be particularly good phenomena to work with. Moreover, Piaget and Inhelder had already done two studies on children's reasoning about shadows that would provide a good beginning. However, they had never studied children's understanding at the level of practical intelligence. In addition to merely asking children questions such as "What makes that shadow?" "What is a shadow made of?" the procedure called upon children to be active in creating shadows and it confronted them with certain contradictions in shadow phenomena. I asked:

Can you make your shadow hands clap? The contradiction here is that when you clap, you can see and experience the hands coming together, and in front of a mirror, you can see your hands coming together perfectly well, but the problem with shadows is to overcome the merge.

How can you fix it so we can see the whole body shadow of the horse? Fix it so we can see the shadow of his tail and whole body. The problem here is fairly easy at the level of practical intelligence since children can experiment, but the first idea to come to a number of children is to turn the horse 180 degrees. If you want to see the shadow of the tail, you put it closer to the wall!

Make a shadow horse on the wall, and make your shadow horse give my shadow horse a kiss. The spatial arrangement is such that the only way to succeed is to extend the arm parallel to the wall, reaching toward neither the wall nor the interviewer. This is rather difficult. The youngest children cannot think of the shadows touching without the objects themselves touching. Or, what makes sense to them may be to touch the shadow on the wall directly. Transitional efforts were reaching toward the interviewer's horse, sometimes nearly falling over in the effort! We always moved in the end so the child was successful, even if her method was not correct.

The next part of the procedure is what I call the "Kiss-Tickle-Pat" procedure. The child is told to watch my shadow horse, and I then playfully make my shadow horse "kiss" the child's shadow head. The contradiction in this experience is seeing the shadows touch, but not feeling touched. Here are some of the reactions: A shoulder hunched in anticipation of being tickled; bewilderment at seeing the pat, and turning to see the teacher far behind; bewilderment at the first instance, then absolute amusement the second time; amusement; chagrin; puzzlement; blase lack of surprise; surprise; pleasure.

Then the child and interviewer change places and the child is asked if he can create these effects and the same kinds of behaviors were observed.

Can you make the shadow of your little horse just as big or bigger than the shadow of my big horse? This was very easy after a demonstration, but first efforts were likely to be holding the horse high to make it big, or putting it on the floor to make it little. Logical, but wrong! Even the youngest children could make their shadow horse and themselves bigger and smaller, and this question inspired a good deal of experimentation. The younger children explained it in terms of getting closer to the wall, but children with sophisticated conceptions explained it in terms of being closer to or further from the light. This was highly significant in terms of showing whether their reasoning was a result of coordinating the relations between the light, screen, and object--or failing to include the light in the causal relation. One child while backing up to make his shadow bigger, bumped into the lamp and said, "What's that thing there for?"

In the course of making bigger shadows, we made sure that the child moved behind the lamp so we could ask, "What happened to the shadow?" This was perplexing to many of our children. I was surprised that so many were surprised. One four-year-old was sure that it had run out the door and went to check. As he stood in the doorway, he could see no shadow outside or inside the room. When I asked, "What happened to your shadow?" he replied, "It's in the wall!"

Can you make your shadow on that wall-behind the lamp? It was amazing to see many children walk up to the wall, expecting to see the shadow appear just as it had when they had walked up to the first wall. When they saw no shadow, they often waved their hand and tried other actions. Here the contradiction is that the same action of walking up to the wall does not always produce the shadow. A common view, even among older children, was that it was their own action that produced the shadow. One four-year-old, when asked what makes a shadow, confidently explained, "By walking," and attempted to demonstrate.

Is the shadow of the girl on the left in front of her or behind her? And the girl on the right? Is her shadow in front or in back? Why is it that sometimes a shadow is in front and sometimes in back? Well, she's looking back, and she's looking in front of her. She's leaning back, and she's leaning forward. This is often accompanied by demonstrations in which the child is surprised that this method doesn't work.

Now, your shadow is in front of you. Can you make your shadow come over on the other side of you? Almost all the children try very hard to do this by facing the other way, and only a few children know immediately that they have to move to the light. Their surprise is surprising! Some efforts go to the extreme of lying face down on the floor! One child persisted for a long time, turning a horse every imaginable way in an effort to make the shadow go on the other side.

If I put this horse in front of your tummy, will we see the shadow of the horse? Many children incorrectly anticipate that they will and are surprised when they see the merge. Is the shadow horse still there, even if you can't see it? Most of the older children, as well as the younger, are certain that the shadow of the horse is still there. This is the last incorrect notion to be abandoned by older children.

With a flashlight, we ask for predictions about where to put their hand to make a shadow hand, and ask where we will see the shadow. One typical response is that of young children who wave their hand at the ceiling, parallel to the flashlight. If that doesn't work, they think that maybe reaching higher will. Some children say that it is not possible to make a shadow hand on the ceiling because they can't reach that high.

Where is your shadow when you can't see it? When you're in bed at night under the covers, what happens to your shadow? Is it still there or not? Some children say that their shadow is certainly still there, but it's all squished under them--or in the darkness somewhere--or inside their tummy. Some explain that when they can't see their shadow, it's inside them, and that sometimes it comes out so they can see it. One five-year-old whose mother was pregnant explained that the shadow is made in the uterus.

Just as Piaget had to study mental functioning isolated from the usual complexity of life, perhaps it is necessary to take some intermediate steps such as I have described toward identifying stages in classroom activities. This type of research helps us understand some of children's spontaneous ideas about some shadow phenomena, but it still doesn't help us know how to teach. The teachers in the HDL and I have only begun experimenting with shadow activities, but I can share something of where we are.

1. We found out the hard way that it's better to begin by letting children freely experiment. In free experimentation, with toddlers, it's often a lot to foster recognition that there is a correspondence between themselves and their shadows. Interest in and experimentation with shadows is short-lived. They tend to come in and out of the shadow area.

Three general educational approaches:

1. To simply stimulate children to make observations about shadows and lights and to articulate them.
2. To inspire children to try to create particular shadow effects.
3. To inspire children to use shadows in the context of games and other activities such as: shadow charades, story telling, shadow tag, silhouettes, and guessing objects.

What we must do next is to try to understand better how progress looks and what is real progress. This involves appreciating the important place of children's wrong ideas, and, rather than correcting them, accepting them. It also means supporting children's continued observations. This can lead to genuine reconstructions and construction of a better intellectual instrument with which to make better observations.

Research in Action II...
Computer Fair

The following companies were represented at the Computer Fair. Their participation and cooperation is greatly appreciated.

Agriplex Computer
3206 34th
Lubbock, Texas
(806) 797-4495
Representative: Mel Harp

Computerland of Lubbock
6223 Slide Road
Lubbock, Texas
(806) 792-3835
Representative: Dr. Bob Williams

Radio Shack Computer Center
3625 34th
Lubbock, Texas
(806) 793-1467
Representative: Warren Haven

Unisource Electronics, Inc.
2807 74th
Lubbock, Texas
(806) 745-8835
Representative: Craig Reitan

Micro Worx
4210-D 50th
Lubbock, Texas
(806) 797-2623
Representatives: Richard Stewart & Wayne Green

The Institute for Child and Family Studies also participated in the Computer Fair.

WELCOME TO THE 1982 RESEARCH IN ACTION CONFERENCE

As you look at the various computers on the market and talk to the representatives from the numerous computer companies, it is very easy to become confused by all the different features available on todays microcomputers. We hope that the computer fair will help you to learn a little more about computers and the uses that they can serve in your office and classroom. To help you have a beneficial experience, we have listed some questions that you may want to ask the computer company representatives. Although this is definitely not a comprehensive set of questions, it can serve as a helpful guide to the novice. The questions are divided into office and classroom, but should not be considered exclusive of one another.

OFFICE

How much memory does the computer have? (You usually want at least 48K)

How many columns wide is the screen? (The range is from 40 letters across to 80 letters across. 64 to 80 across is best for word processing)

Is the keyboard a standard size? (Some keyboards are smaller than others)

What kind of monitor (television screen) do you think is best and why? (They come in green, black and white, and color)

Will I need special electrical outlets or equipment to install this in my office? (Usually you won't need anything other than a standard wall plug)

What other equipment can I hook up to my computer? (You will probably want to attach a printer, disk drives, and/or a telephone modem to your system.)

What software (computer programs) are available for the computer? Will it do word processing (letter writing); make mailing labels; keep financial records; and/or keep records on the children and personnel? What other office software is available?

Can this computer communicate with other computers over the phone lines? Why would I want a computer that can communicate with other computers?

What kind of printers are available? Which type of printer is best for my needs? (Printers generally come in two types: dot matrix or daisy wheel. The print from a daisy wheel printer looks like it was typed on a typewriter (letter quality). The letters on a dot matrix printer are composed of a series of small dots and are not as attractive as the print from a daisy wheel. However, dot matrix printers are usually less expsensive and faster than daisy wheel printers)

EDUCATION

Does the computer have graphics? (Graphics allow one to draw pictures on the screen)

Can the computer do color graphics? (Some have color, some do not)

What about sound and speech? (With children who cannot read, it is sometimes helpful to have the computer make a sound or actually talk to the child)

Can I attach joy sticks (game paddles) to the computer? (It is sometimes easier for the children to use a game paddle rather than use the keyboard)

How child proof is the computer and software? (Some have cartridges that are much more child proof than floppy disks which can be bent easily)

How much software is now available for children who can not yet read? How much is being developed for preschoolers?

Can children actually write programs for the computer? Can a teacher actually write programs on the computer? (Ask about the languages PILOT and LOGO)

****

Although these questions are not all inclusive, we hope they will help you to have an educational experience when talking to your local computer representatives. If you have any questions after you return to your home, please feel free to contact the Institute for Child and Family Studies for futher information concerning computers and computer software.

Research in Action II...
Interest Sessions

Interest sessions for RESEARCH IN ACTION II covered a wide range of topics but were broadly grouped into four tracks:

Health/Handicap Track - Health care and services for handicapped children are seen as closely related fields. Preventive health strategies, health care, screening and assessment to determine handicaps, and programming for health/handicap are all part of this track.

Early Childhood Track - The early years of a child's life are critical in establishing a basis for future growth and development. Creative and innovative approaches to curriculum, assessment and parent involvement can foster positive development in early childhood. This track looks at new trends in early childhood.

Management Strategies/Staff Development Track - Effective management is the key to any successful program, and staff development is a critical aspect of management. Good management is especially important in the current move toward deregulation and emphasis on the local control and management. Timely management topics are explored in this track.

Special Interest Track - There are many areas of interest that cover a wide range of content areas. This track highlights some of these interests, such as computers, interpersonal relationships and current trends in research.

Editors Note: Some of the papers included in this document were edited for clarity and consistency of style. Content was not altered in the editing process.

Research in Action II...
Health/Handicap Track

I DIDN'T KNOW I KNEW SO MUCH TO DO WHAT I AM DOING: COMPETENCY-BASED TEACHER PREPARATION FOR EARLY CHILDHOOD HANDICAPPED PERSONNEL

Dr. Patricia Hutinger
Western Illinois University
Macomb, Illinois

The purpose of this paper is to describe six year's work at Western Illinois University in the development of a set of competencies used in an interdisciplinary project to train personnel to work with young handicapped children. The training program, the Western Illinois University 0-6 Early Childhood Handicapped Interdisciplinary Personnel Preparation Project (WIU 0-6 ECH Project), was developed in response to a need to hire qualified, competent staff for a Handicapped Children's Early Education Program (HCEEP) infant demonstration program, the Macomb 0-3 Regional Project. The competencies, which have been developed as an integral part of the project, are designed for personnel in both infant programs and programs that serve three to six year old handicapped children. A wide range of personnel are targeted, including educators, speech and language personnel, psychologists, motor development specialists, and others who intend to work with very young handicapped children.

The term "competency" represents the accomplishment of a selected objective and the demonstration of the abilities and knowledge necessary to perform that objective. A competency-based teacher education (CBTE) program specifies the competencies students must demonstrate, indicates the criteria which should be used to assess the competencies, and holds the student accountable for meeting the criteria. If teacher certification, or completion of a teacher education program, is accepted as an endorsement of an individual's effectiveness as a teacher of young children and their families, then employment of CBTE programs in the certification process is a technique which ensures the validity of that endorsement. Since CBTE differs from the broad objectives of traditional teacher education, many professionals believe that completion of a competency-based program provides far more information about a student's ability to teach or to work with children than do course grades.

Since 1979 teacher competencies have been an integral part of the WIU 0-6 ECH Project. The 0-6 ECH Project faculty, participating practicum supervisory staff, and students developed a set of competencies during the first years of the project which have undergone several revisions. The competencies were initially developed from coursework content and practice activities and were part of the 0-6 students' plan of study.

WIU 0-6 ECH Project staff utilized the "model building approach" recommended by Dick, Watson, and Kaufman (1981) in revising the teacher competencies. This strategy of identifying competencies initially involves the analysis of the process necessary to design, implement, and evaluate a successful training program. In this way it is possible to identify the complete range of competencies required of teachers of young handicapped children.

The 1982 revised teacher competencies incorporate the range of skills suggested by Dick, Watson, and Kaufman such as needs assessment, needs analysis, planning, management, design, delivery, evaluation and revision of educational programs. The original 0-6 skill areas were enhanced by additions of competencies identified by others. Compiling competencies through a concensus approach and the "model building approach" provides the specificity particular to teachers of young children with handicaps. Over 30 sources were examined by Hutinger, director of the project; Marshall, graduate assistant; and Kibler, consultant, in revising the original competencies.

At the present time the revised competencies are undergoing validation. A rating form listing each competency has been widely distributed to preschool program personnel including students (both regular and ECH), former students now working in ECH, infant program staff, preschool teachers, kindergarten teachers, Head Start personnel, psychologists, administrators, university faculty, and program support personnel. Over 300 ratings have been returned from 11 states. Competency validation will be completed by the spring of 1984. An example of the response to the competencies which has occurred during the validation process is an exclamation from a preschool teacher who was asked to rank the competencies during a training session, "Wow! I didn't know that I had to know this much to do what I'm doing--but I do!"

WIU 0-6 ECH Project Teacher Competency Model

The WIU 0-6 ECH Project and accompanying competencies were designed with the assumption that the individual background of each student can be identified and analyzed, and that each student enters the program with unique experiences and possesses his/her own competencies. In any ECH training program which utilizes the 0-6 ECH Project Teacher Competencies, these competencies are to be taken into consideration when each student's program is developed. The student, program faculty, observers of the student's work with children and practicum site personnel should all be involved in determining the student's program. Course content and competencies should be planned to meet the requirements for certification as well as the practical needs of programs for handicapped young children (Hutinger, 1981).

Instructors of ECH students can use the 0-6 ECH Project Teacher Competencies, combined with information about children, families, and situations which the student may encounter, to provide a needs assessment. This then will serve as the basis for planning a schedule of courses, observation, professional reading or staff development activities to engage in for competency acquisition that is relevant to particular teaching duties.

Competency-based learning experiences will allow students to monitor and plan their accomplishments in each course of their 0-6 ECH study. Competencies for each course should be outlined at the outset of the program clarifying the learning outcomes, processes, and expectations. Students should receive a complete set of competencies at the beginning of the school year and be instructed that demonstration of the competencies is the basis for grading. Faculty involved in the ECH courses then should keep track of the competencies which the students demonstrate in their particular areas, and the students should maintain a competency completion master sheet for their own reference (Hutinger, 1979).

WIU 0-6 ECH Project Teacher Competency Performance Record

In the introduction to the WIU 0-6 ECH Project Teacher Competency Performance Record (TCPR), Kibler wrote that the TCPR is a form which provides for documentation of demonstrated competency acquisition. As well as listing the competencies which comprise the teacher competency model, the form provides for a listing of suggested processes for a student or teacher to carry out in order to demonstrate the suggested teacher performance under the conditions that are also listed as suggestions. The conditions of performance generally indicate the suggested performance evaluation mode which is also listed. The evaluation mode may include assignment or course grades for students, documented professional reading and participation in staff development activities for trained teacher and documented observations for both (Kibler, 1982).

The TCPR organizes the competencies under the following components:
- Services to Children Competencies
- Services to Parents Competencies
- Demonstration/Dissemination Competencies
- Staff Development Competencies
- Administration and Management Competencies

Competencies are arranged in sequence under each component. The sequence is evidenced in the order in which the competencies are listed within each component under the categories of knowledge objectives, ability or skill objectives and affect or attitudinal objectives which are categories suggested by Hutinger (1982). This is consistent with Dick, Watson, and Kaufman's assertion that the "model building approach" brings about the identification of skills which are required of teachers and a curriculum for learners which includes the knowledge and abilities they have to possess (Kibler, 1982).

Use of the WIU 0-6 ECH Project TCPR Form

The competencies provided on the TCPR form are to be used by faculty and students, and also by trained teachers who continue to develop competencies and refine their skills. Program faculty members can identify duplication and omissions in the experiences provided for university students in course work, and practicum/student teaching situations by comparing these to the TCPR. Changes in a university curriculum to adequately provide opportunities for competency acquisition can result from taking this approach to implementing CBTE (Hutinger, 1979).

University students can utilize the TCPR as they progress through teacher training programs throughout their careers as teachers of young children with handicaps. The TCPR is to be first used by students to become aware of what competencies a teacher in the field should be able to demonstrate. The TCPR components will allow students to measure their progress in competency acquisition through documentation on the performance record. The TCPR can also be used by a trained teacher to document eligibility for certification, employment, promotion, merit pay increases or as an ongoing needs assessment for identifying training and technical assistance needs. Successful use of the TCPR depends on the ability of the student or teacher to continue to document competency acquisition throughout his/her training and work experiences as competencies are acquired, demonstrated and certified (Kibler, 1982).

The WIU 0-6 ECH Teacher Competencies are to be used with the assumption that students will acquire competencies at different rates. Faculty must be willing to place the responsibility for learning on the learners, and allow for individual differences in competency attainment. The processes, conditions for performance, and the teacher performances can be developed to suit the particular circumstances of the person developing the competencies if agreed upon with the person certifying the demonstration of competency acquisition (Kibler, 1982).

REFERENCES

Dick, W., Watson, K., & Kaufman, R. Deriving competencies: Concensus versus model building. *Educational Research*, 1981, *10* (8), 5-10, 13.

Hutinger, P. *Competency-based teacher education in early childhood special education: The state of the art*. Chapel Hill: TADS, 1982.

Hutinger, P. 0-6 early childhood handicapped interdisciplinary personnel preparation project. *Illinois School Research and Development*. 1981, *7*, (2), 1-6.

Hutinger, P. *Preservice early childhood: 0-6 interdisciplinary early childhood handicapped personnel training project progress report, 1978-79*. (Goo7701525) Western Illinois University, 1979. (GFDA: 451-AH-80717).

Kibler, B. Introduction to the 0-6 early childhood handicapped interdisciplinary personnel preparation project teacher competencies. Unpublished paper, 1982.

THE DEVELOPMENT AND ASSESSMENT OF A CHILD LIFE PROGRAM ON THE HOSPITAL PEDIATRIC WARD

Dr. Jeanette Jenkins
Texas Tech University
Lubbock, Texas

David K. Carson
Texas Tech University
Lubbock, Texas

C. Bondred Stout
Texas Tech University
Lubbock, Texas

The Viability of Child Life Programs in the Hospital Pediatric Unit

In the world today, child advocates are constantly watching for opportunities to make life better for children and their families. Many of these children are confronted with hospitalization for various reasons. Hospitalized children need total care. Founded on these thoughts, the first practicum was initiated in Methodist Hospital, Lubbock, Texas, in the fall of 1978. Medical care is priority one, but usually this care is concerned with but an isolated part of the person. The hospitalized child needs to continue development to the degree possible in other physical ways, in intellectual concerns as well as social-emotional growth.

The family members often have need to talk through the trauma of the child needing medical care. The students and graduates whose training and experience is in Child Development are equipped to meet the needs of pediatric patients and their families.

The competent child developmentalist can also be of great assistance to the pediatric nurse. These feelings have been validated by the interest and continued acceptance of the Child Life Program in the Methodist Hospital. Medically trained personnel should spend their time and talent on the medical problems and needs of the patients. Developmentally prepared persons should spend their time and talents on the activities filling the many "other" hours that patients are confined.

The physical self can deteriorate with inactivity. Intellectual stimulation should continue as soon as the convalescing period begins. The experience of hospitalization can be debilitating emotionally and socialization may plateau or regress.

Emotional stress is experienced by family members as well as by the patients. The child development specialist, because of a planned educational program, can help the parents, siblings and other family members deal with emotional stress. Sometimes this may provide the greatest assistance. This emotional support for the family is often reflected by less tension in the patient.

In those hospitals where holistic medicine is practiced, the child development specialist should surely be a part of the consulting team working together toward total health improvement.

A point of clarification: The terms Child Life Program and Child Development Specialist have different meanings: the Child Life Program is "the program"--the activities and the interaction; the

Child Development Specialist provides and activates the program.

Statement of the Problem

While it is standard practice for professionals in hospitals to ameliorate the psychological effects of the experience on children, such factors as shortage of time, ambivalence of roles, or lack of interest or specific skills often prevent these personnel from interacting with the patients in non-medical but therapeutic ways. Although occasional contacts with patients are made by doctors, nurses, physical therapists, occupational therapists, volunteers and other hospital staff, such visits are believed to be too brief and infrequent to have a measurable psychological effect on the child (Thompson & Stanford, 1979). It is for these reasons that a specifically defined role and position can be established for a professional who has special knowledge of the developmental aspects of a child's life as well as substantial experience working with children.

The Child Developmentalist, trained at the bachelor or masters level, possesses the knowledge and skills necessary for working with children in a variety of non-medically therapeutic ways. Child Development Specialists have the abilities to engage children in intellectual tasks appropriate for the age level of the child. They can initiate and supervise individual and group episodes of play. They can also help prepare patients and their families for surgical and other medical procedures, conduct hospital inservices, train volunteers, sensitize students to the unique needs of the hospitalized child, and conduct outreach/educational programs for community groups.

As Thompson (1981) indicates, it is possible to demonstrate that Child Life services are cost-effective by (1) reducing medical-related costs for the family, (2) reducing hospital costs through more efficient use of hospital personnel, and (3) increasing benefits to the hospital through an improved hospital image. More important than this, however, is the reduction in stress, the emotional support, and the learning and growing through the hospital experience the child can acquire with the help of the Child Development Specialist. Contributions of this nature have been demonstrated in a number of studies (Williams & Powell, 1980; Wolfer & Visintainer, 1979; Melamed & Siegel, 1975; Wolfer & Visintainer, 1975; Cassell, 1965).

There has been some opposition from administrators and medical staff in a number of hospitals toward the establishment of a Child Life program. According to Thompson and Stanford (1979), this opposition is rarely the result of "personality conflicts," but more often emerges because the role and function of the Child Life worker, they feel, may parallel or even conflict with those of another group in the hospital system. This is not to assert that these other hospital staff are likely in every situation to display resistance, for in many more cases these personnel do lend their support to the idea of a Child Life program (Thompson & Stanford, 1979). What is needed is more evidence for the efficacy of such programs. Unfortunately, according to Mather and Glasrud (1981) only about 28% of the existing Child Life programs in North America have received any formal evaluation concerning the acceptance or effectiveness of the programming, and Thompson (1981) emphasizes that much of the existing research in this area has not been characterized by a sound experimental design. Hence, what is needed is a simple but thorough procedure allowing investigators (and eventually, perhaps prospective Child Life employees) to effectively demonstrate the outcomes of a Child Life program. Ricks and Faubert (1981; p. 17) sum it up well: "If evaluations regarding program outcomes were made available, it seems plausible that Child Life and similar programs may be more readily accepted and recognized as a vital step toward total care of the hospitalized child."

Review of the Literature

Non-medical therapeutic programs in hospitals are relatively new. Although their actual number in North America is not known, there are at least 150 such programs in Canada and the United States combined (Mather & Glasrud, 1981). According to Rutkowski (1978), 55% of all Child Life programs in particular have been established since 1968. These programs primarily employ people educated in Child Development, Education, and Recreational Therapy, and a much higher percentage of full-time females (64%) than males (9%) are involved in such programs (Mather & Glasrud, 1981). A similar ratio is found for part-time workers (23% females and 4% males).

Ricks and Faubert (1981) note that a survey of hospital play programs in North America revealed that some programs emphasized entertainment while others centered on meeting the full range of psychological, emotional and familial needs of the pediatric patients. Perhaps differences in programs are due in part to the emphases of the staff which come from a variety of educational disciplines. McCue et al. (1978) and Rutkowski (1975) have noted that originators of these play programs have come from such disciplines as diverse as child development, recreation, education, psychology, social work, occupational therapy, and pediatric nursing.

According to Ricks and Faubert (1981), Child Life programs are more comprehensive in their orientation than are other non-medical therapeutic programs, in that they emphasize such things as individual care, family and community involvement, home-like activities for child and family, pedagogical components, and opportunities for creativity and self-expression. These investigators go on to list seven common roles the Child Life worker (or equivalent) fulfills. This staff member typically: (1) implements and supervises the play program, play room, and other related activities (i.e. crafts, films, etc.); (2) participates in orientation and supervision of students and volunteers involved in the program; (3) conducts and records behavioral observations of patients, as might be requested by other staff; (4) participates as an active member of the health care team by attending ward or team meetings to discuss the total child and his/her needs; (5) maintains good relationships with the child and family by encouraging participation, acting as a resource and offering support; (6) is responsible for the maintenance and selection of play materials and equipment; and (7) is responsible for staff, volunteers and students regarding the special needs of hospitalized children, uses of therapeutic play, and other activities.

Ricks and Faubert (1981) go on to cite several recommended areas of study that the non-medical staff worker should have as an appropriate background. These areas are central to the Child Development Specialist's unique focus of training. They are: (1) awareness of the emotional effects of hospitalization on the child, and the special needs of the patient and family during this period of stress; (2) a thorough knowledge of basic Child Development areas; (3) rudimentary medical knowledge; (4) experience in programming; (5) knowledge of family systems; (6) ability to involve others in setting up practical activities; and (7) a repertoire of play activities and essential knowledge of their therapeutic potential.

Currently there are only a handful of educational programs in university settings which specifically train Child Life Workers (i.e. for hospitals) on the undergraduate and graduate level. These programs are beginning to grow in number, however, as the need for and potential benefits of such a professional are increasingly realized (Mather & Glasrud, 1981). The norm is for Child Development Specialists and other professionals to move into the hospital milieu and then receive some on-the-spot training of basic hospital and medical procedures. While this in vivo approach has its strengths, there is little doubt that a Child Life program developed within the university system, matched with inservice training, is the most effective method of training (Ricks & Faubert, 1981).

Thompson (1981) cites a number of studies demonstrating the positive effects of interventions such as those typically provided by Child Life programs (e.g. preparation for hospital experiences, special attention to parents, and emotional support to the child during anxiety-provoking periods). For example, children receiving such care have responded with better post-operative physiological indicators (Wolfer & Visintainer, 1975; Melamed & Siegel, 1975; Skipper & Leonard, 1968; Mahaffy, 1965). Research also suggests fewer and less persistent post-hospital medical concerns (Skipper & Leonard, 1968; Mahaffy, 1965), as well as a lower level of psychological upset while in the hospital (Melamed & Siegel, 1975; Wolfer & Visintainer, 1975; Mahaffy, 1965). As Thompson (1981) points out, data of this sort indicates monetary and emotional benefit to families through reduced need for intensive medical and psychological intervention following hospitalization, and possibly through shortened hospital stays. Such rewards to patients and their families will, in the long run, be profitable to the hospital also since it maintains family services, increases clientele, and builds reputation and popularity in the community. It is believed that the quality and comprehensiveness of any hospital program in the end will always prevail.

Thompson (1981) goes on to cite some data pointing to the fact that services such as preparation, emotional support, and organized play increase client cooperation during stressful procedures like surgery (Wolfer & Visintainer, 1979;1975) and reduce unnecessary demands on limited staff time. This includes a reduction in behaviors such as unnecessary use of the nurse call button or a decline in the number of children lingering around the nurses station.

Behaviors deemed as positive or negative have also been used to measure change attributable to Child Life programming (Thompson, 1981). Williams and Powell (1980) found that the frequency of positive behaviors such as constructive individual and group play increased and negative responses (i.e. screaming, nail biting, throwing play materials) decreased with the introduction of supervised play in a pediatric ambulatory clinic.

Evaluations regarding the effectiveness of non-medical programs which concentrate on a particular aspect of development during the child's hospitalization are in existence and the results have been encouraging. For example, some programs have emphasized cognitive maintenance and stimulation (Swanson, 1979; Bowers, 1977; Cyphert, 1974). Others have aimed toward meeting family needs and helping families maintain cohension during the stressful experience (Bowden, 1979; Clark, 1979; Hardgrove & Dawson, 1972; Issner, 1972). Meeting the child's social and emotional needs has characterized other programs (Lowitt, 1973; Kunzman, 1972; Briggs, 1967). Still others have been concerned primarily with improvements in physical health as influenced by non-medical kinds of intervention (Epstein, 1978).

While a variety of programs have found merit in their resulting outcomes, the need exists for programs that integrate all areas of child development with the medical treatment. Scientific evaluation must follow such endeavors. It is hypothesized in this proposal that a carefully planned Child Life pilot program will yield the results required to reveal both the need for and numerous benefits of such a program.

Method

Subjects

A minimum of twenty pediatric patients, ten experimental and ten control group subjects ranging from 6-16 years of age, are being non-randomly chosen from two hospitals in Lubbock, Texas. Subject selection is based on type, degree, and similarity of illness or injury, with the majority of subjects being patients in traction. Subject selection is also determined by length of probable stay in the hospital (i.e. a minimum of two weeks), as well as willingness on the part of both patient and parents to participate in the study and Child Life program. Experimental and control group subjects are being selected from both hospitals to insure sample homogeneity over time. Both groups are represented by families of varying SES, ethnic origin, and level of education of patient and parents.

Program Implementation

The Child Life program is running indefinitely in both hospitals. However, data collection for both experimental and control groups is taking place over a one year period. Experimental group subjects are being selected and tested first in both hospitals over the first six month period. Following this period, data on control group subjects will be collected, since the Child Development Specialists, all Texas Tech University students, will not be available for participation in the program during the late spring and summer months.

One strength of the program is that it is being made available to all patients considered "experimental" in both hospitals who range between 2-16 years of age. However, only those patients considered long-term (minimum stay of two weeks), who are between the ages of 6-16, are being tested as experimental or control group subjects for the purposes of the research.

A total of four Child Development Specialists (CDS's), all senior-level students in Child Development at Texas Tech, are working with the patients. They interact with the patients several times a week, where each participant in the study receives approximately equal amount of time. Through recreational, creative and educational activities, adapted to the child's developmental level and interests, the CDS's seek to stimulate and enhance the patient's psychomotor, cognitive, social and emotional areas of functioning. Each worker has on hand a variety of toys, games, books, craft materials and other objects, as well as an assortment of ideas for family and social games. While the patient is given the opportunity to choose the activity upon each encounter with the CDS, the Child Development Specialist will often suggest an activity or topic of discussion for that day.

Parents and siblings of the patient, as a result of the program, not only receive some free time away from the room if desired, but the CDS's also serve as active listeners and consultants to the family members. In this way the program is geared toward reducing stress and meeting a number of needs of the entire family, a task often too time-consuming for the other hospital staff.

Evaluation Procedures

Several methods of data collection and evaluation are being employed by the investigators. As has already been alluded, the research strategy is of the traditional pretest-posttest, experimental-control group design (Campbell & Stanley, 1963). While the study will possess other features of data collection, contrasts between experimental and control groups will only be assessed along two units of analysis: changes in anxiety and self-esteem during the period of the hospital stay. It is hypothesized that the experimental group subjects will experience significant reductions in anxiety and increases in self-esteem as compared to control group subjects over the period of hospitalization due to the influence of the Child Life program.

The State-Trait Anxiety Inventories (STAI), developed by Spielberger et al. (1973;1970), are being used to record self-reported changes in anxiety in patients and parents over time. The Coopersmith (1981) Self-Esteem Inventories allow for recording of fluctuations in the patient's self-esteem during his or her hospital stay. Scores on both of these instruments are being obtained every other day, making possible the plotting of data according to a multiple time series model. It is believed that this method of data collection allows for reduction of test-retest response set error or effect of instrumentation on the subject, while at the same time yields frequent measurements of change in anxiety and self-esteem. Use of this method also helps the researcher establish some initial baseline scores which are beneficial in teasing out the influence of time alone on the subject from the effect of the CDS-patient interaction variable (or lack of it in the case of control group subjects).

Elements of CDS-experimental subject interaction are being recorded by the investigators through use of the Activity Checklist, a behavioral observation instrument developed by Jenkins and Carson (1981) for the purpose of this study. In a 1981 pilot study by these investigators, the Activity Checklist yielded a .75 test-retest reliability coefficient and a .84 inter-observer agreement. Use of this observational method and instrument allows for recordings of specific patient selected activities as well as aspects of CDS-patient interaction. The investigators are also able to make note of particular motor, emotional, social and cognitive experiences of the subject over time. This makes possible a rudimentary comparison of observed patient behavior with his or her self-reports of changes in anxiety and self-esteem during the hospital stay.

As a final measure of CDS effectiveness with long-term patients during the course of their hospital stay, a simple questionnaire is being administered to patients, parents, and head nurse(s) soon before the child's dismissal. This instrument yields a possible score of 8 points, with a perfect score indicating that these individuals saw the Child Life program as being exceptionally helpful to the patient and family during the patient's hospitalization.

It must be pointed out that no observations on the Activity Checklist will be conducted with control group subjects when data collection begins with these individuals, in that they will be having no interaction with the CDS. For this reason also, the 8-point questionnaire will not be issued to the controls near the end of their hospital stay. However, in regard to the latter instrument, each control group subject will be asked whether they would have liked the services of a Child Development Specialist during their hospital stay, or if they were ever hospitalized again, whether they would like a CDS present on the floor. The same will be asked of parents of these control group subjects.

Because of the relatively small number of anticipated long-term patients in this study, the researchers are utilizing one final means of data collection. This involves the subjective recording of information derived from each CDS-patient interaction by the CDS. In this way, important case study data can be summarized in ways that may enhance the findings of the more objectively recorded information on each experimental subject.

Analysis of Data

Graphs and scatterplots will be used in the final write-up of this study to pictorially represent the changes in anxiety and self-esteem of the experimental and control group subjects over time. Variations of the analysis of variance will allow for the statistical evaluation of both within and between group differences in anxiety and self-esteem. This will involve a blocking method whereby pretest and posttest means on the first and last three points of measurement are respectively combined, with contrasts then made between groups through use of a simple ANOVA. An analysis of covariance (ANCOVA) may also be run on the data in order to subject the data to a more powerful test, as well as to control for any important differences in pretest performance of both groups by adjusting posttest scores. Use of these procedures will allow for an assessment of differences of mean change between the experimental and control group over time, as well as, of course, differences in mean posttest scores. It is also possible that a post-hoc multiple comparisons test, such as the Scheffee, may be used to determine which means differ significantly from other means at various points in time for both measures of anxiety and self-esteem.

Preliminary Results and Discussion

Changes in Anxiety and Self-Esteem: The Case of David (Subject 1)

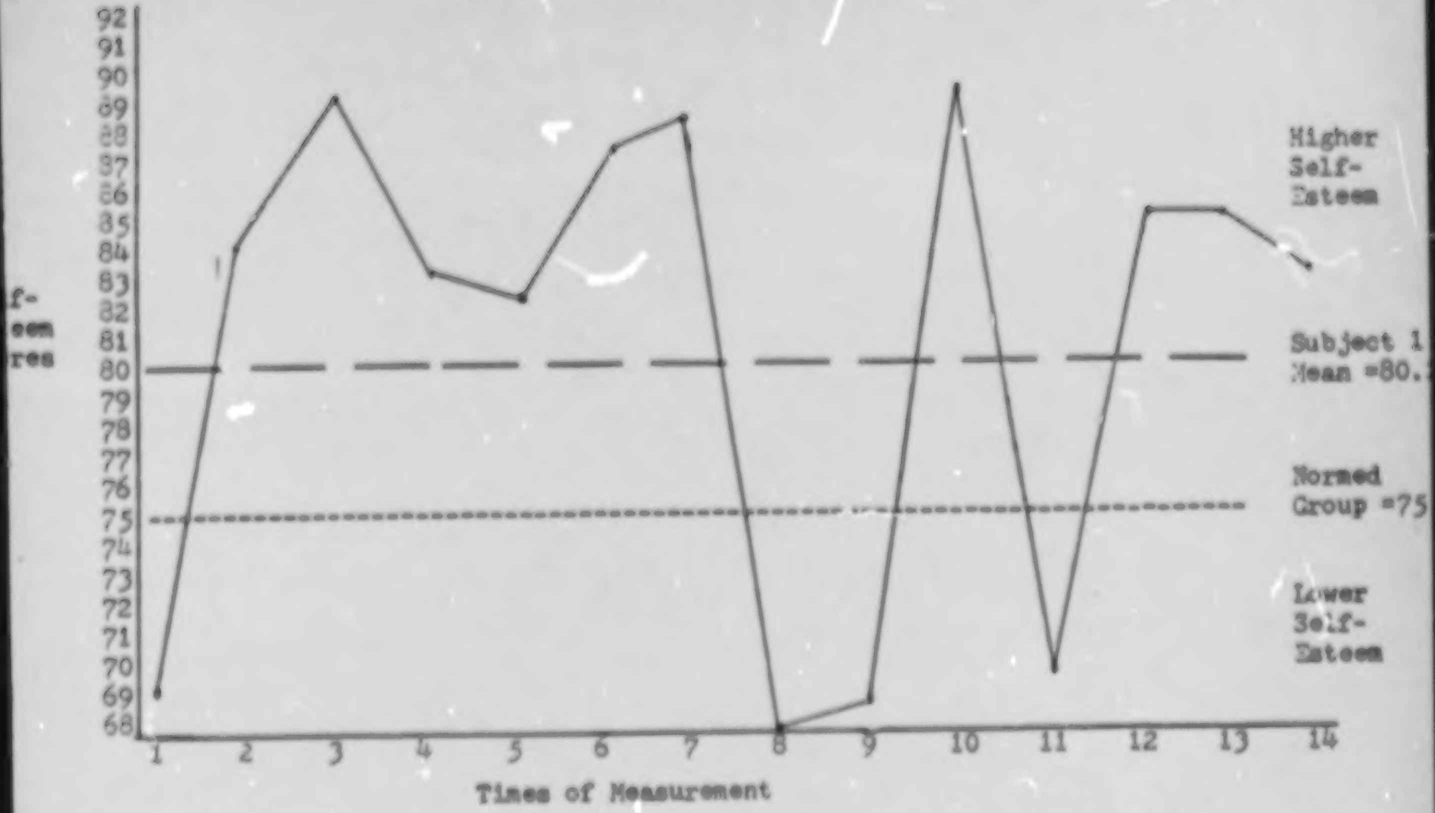
David, a nine year old Hispanic male, was tested a total of fourteen times on the anxiety scale (state anxiety only) and the self-esteem instrument. These inventories were administered approximately every other day, each one at different times of the day. The assessments were never given in the same order, even though they were administered one right after the other at each time of measurement. The results of the state anxiety and self-esteem scores are represented by Graphs 1 and 2.

Little significant information may be ascertained from this single case study. Comparisons between experimental and control groups at the end of the investigation will no doubt provide more complete and thus valid results. Nevertheless, a few comments may be made in regard to Subject 1's data.

First, it is evident from Graphs 1 and 2 that while the tests are scaled somewhat differently, fluctuations in self-esteem during David's hospitalization were, surprisingly, much more dramatic than were the changes in anxiety. On both measures, however, Subject 1 did maintain an average score or above in comparison to the norm of a large group of non-hospitalized same-age subjects (Coopersmith, 1981; Spielberger et al. 1970;1973). According to the scores on these two

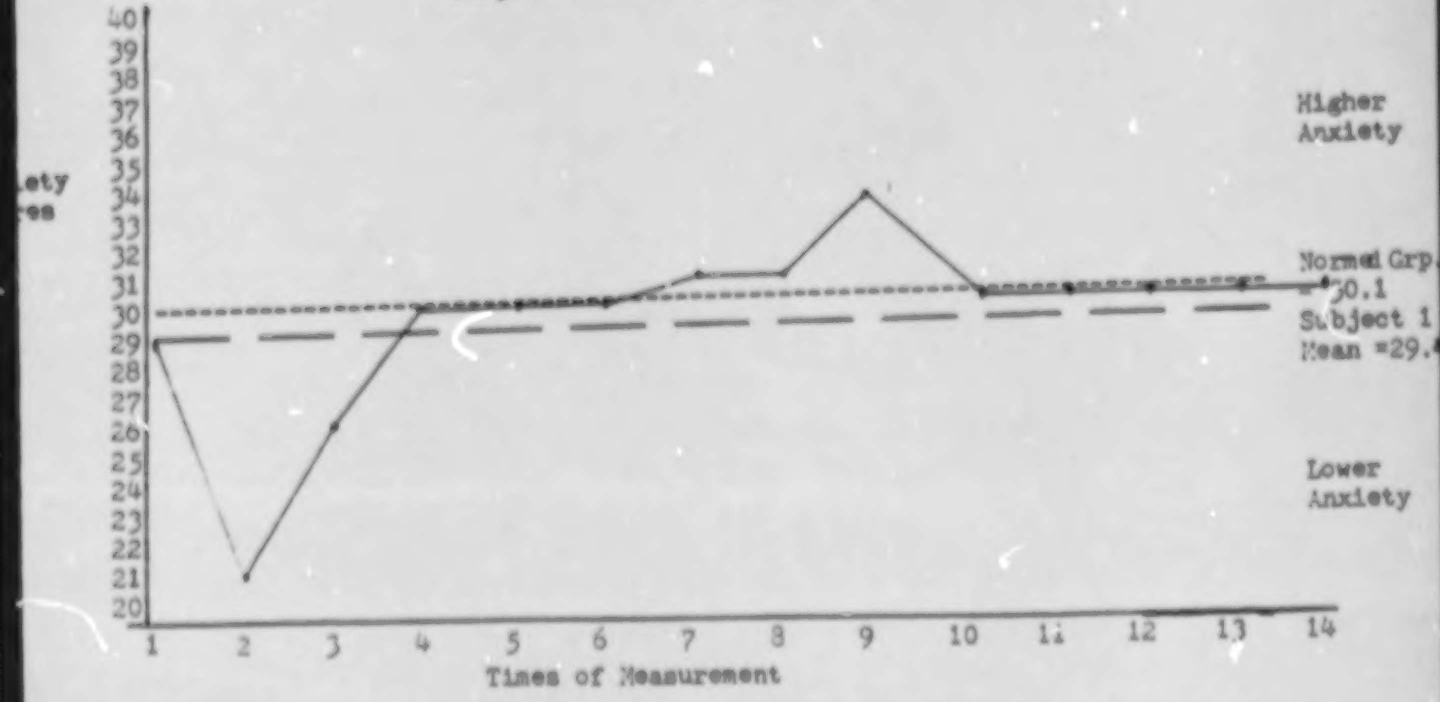
GRAPH 1

Subject 1 Self-Esteem Results



GRAPH 2

Subject 1 State Anxiety Results



BEST COPY AVAILABLE

measures then, David's anxiety and self-esteem remained remarkably sound for that of a hospitalized patient.

Next, it appears as though both self-esteem and anxiety began to stabilize near the end of David's hospital stay. Finally, it is interesting to note that the only noticeable fluctuation in anxiety and self-esteem of Subject 1 occurred during times of measurement 8-11, where David experienced somewhat sharp rises and falls in perceptions of self-esteem and anxiety. Interestingly, it was during this time that a pin was taken out of David's knee and his leg was stretched out for the fitting of a cast. This was a painful experience for Subject 1, suggesting possibly that physical hurt, more than any other single variable, contributes to lowered self-esteem and higher levels of anxiety during the hospital stay.

In brief, this data suggests that David maintained a healthy self-esteem and relatively low level of anxiety during his time in the hospital. Whether these changes, or lack of them, may be attributed to the influence of the Child Life program, however, cannot be determined from this limited amount of data.

Observations of CDS-Subject 1 Interaction

First, according to observed behavioral recordings on the Activity Checklist, Subject 1 was receptive of the CDS's entrance into his room 100 percent of the time. David showed a great deal of positive affect toward the CDS's, and readily entered into conversation and various activities with them. Activities included mostly board games, cards and puzzles. Also, in a number of instances the patient openly received other mobile pediatric patients into his room for games and social interaction. This was almost always initiated by the Child Development Specialists.

Self-Report Questionnaires Completed at End of Program by Patient, Parents, and Head Nurse(s)

A moderate score (4 points out of a possible 8) on the self-report questionnaires was obtained from both parent (mother only) and patient as to the helpfulness of the Child Life program. This suggests that while these individuals were pleased overall with the program, they maintained some doubts as to its assistance to them during their time of stress. One possible reason for this is that the patient sometimes found the testing burdensome. Even though the actual testing time only lasted approximately 15 minutes every other day, David would occassionally express to the investigators that he would rather do something else. Perhaps his mother picked up on this during the course of his hospital stay, thus giving the program only an average rating. If this continues to be a problem with other patients in the experimental or control group, the investigators may have to extend the duration between testing times, such as every third or fourth day.

The head nurse on the floor gave the program a superior rating (8 points), indicating that the program was of immense value to the overall care of Subject 1. This nurse also indicated that the Child Development Specialists have taken some of the load off the nurses' shoulders on the pediatric ward.

State-Trait Anxiety Scores of Mother at the Beginning and End of the Child Life Program

No anxiety scores were obtained from the father of Subject 1 due to his lack of willingness to participate in the research. While the mother's state anxiety (i.e. how she feels right now) at the time of her son's dismissal was substantially higher than it was when he entered the hospital, her trait anxiety (i.e. how she generally feels) dropped considerably at dismissal from what it was at the beginning. This discrepancy in state-trait scores may make sense when one considers that the mother's immediate feelings of anxiety were high due to the unpredictability of David soon leaving the hospital environment and coming home on crutches. However, her general anxiety level (trait) was lower at dismissal time, perhaps because of her assuredness that David's leg was healing properly and that life for the family would someday soon get back to "normal".

Experiences and Impressions of a Developmental Specialist

Program Goals

The goals of the Child Life Program are summarized as follows:

(1) To establish a non-threatening, non-stressful relationship with patient and family
(2) To reduce and relieve fear and anxiety observed in the pediatric patient and family
(3) To build and expand self-esteem of patient and family
(4) To maintain developmental processes of patient
(5) To instigate and encourage ventilation of feelings of patient and family

Statements From Patients, Parents and Head Nurse(s) Concerning the Child Life Program

The following responses are taken from questionnaires completed by the patient, parents, and the head nurse(s) upon dismissal of the patient from the hospital and will confirm the goals of the Child Life Program.

> Patients: "Playing games."
> "I liked it when they played games with me."
> "Talking with her. She even came to see me and play with me even when it snowed. She's real nice and considerate."

Patients: (continued)

"Playing the games and winning."
"Playing games with me."
"Number games."

Parents: "Keeps boredom down and expectations of the next (CDS) visit."
"I can't think of anything more that they need to do, than what they're doing now."
"They would have something to look forward to daily."
"I enjoyed watching my child enjoying activities and I enjoyed talking to her."
"Just talking to him and making him laugh."
"Gives ideas on what to do and act."
"More interaction and learning."
"Just good 'therapy' for me."
"Comfort."
"Talking and playing games."
"The CDS helps the child cope with fears of hospitalization (strange place, strange people, the illness itself)."
"Gives many children a friendly visitor to look forward to."
"She brought out some thoughts and ideas of how the other children at home could be feeling. Also helped the grandmother realize she had no reason to feel guilt due to the child's accident. Also indirectly helped neighbors to cope with their feelings due to accident."
"Gave children a break from the routine of the hospital visit (stay)."
"Their visits make the time go by faster."
"Helped take her mind off of her pain in the knee."

Head Nurse(s): "The visits (they offered stimulation when it was needed most)."
"(CDS's name) gave this patient the personal attention he needed and desired."
"Encourage more play therapy if tolerated by patient."
"They would be there to offer comfort; children think of nurses as causing hurt and the CDS would be there without causing any discomfort."
"Very helpful to father by being someone he could talk to as well as offering stimulation to (patient's name)."
"Offer diversions, information and comfort."
"They can give each child personal attention such as games, personal conversations, etc. that the nurses don't have time to do."

Child Developmental Specialist's Perceptions of the Child Life Program to Date

The Child Developmental Specialist is in the hospital setting by choice. Each CDS brings to the hospital an accumulation of experiences and learns from the patient, nursing staff, families and one another. They have the opportunity to work side by side with the nurse in the routine non-medical care; with the patient during physical therapy; with the parent aiding an ill child; and by comforting and listening as a caregiver to the extended family.

Sitting with a child as a surrogate mother, one can empathize with the parent who is unable to cope with the family crisis. The CDS finds herself spending long hours with a parent who has quit a $9 - $10 an hour job to be with his son twenty-four hours a day, commending and edifying him as a parent, letting him see before his eyes his personal value to his son; helping a burn victim ventilate his own guilt for playing with gasoline and matches, guiding mother and grandmother in consideration of the sibling's feelings and emotions; sharing the joys and tragedies of the pediatric patient, the good news of "no brain damage" and the bad news "it's malignant and inoperable"; and laughing and crying with the family.

Hours at the hospital can be a time of reliving some personal tragedies, a time of looking again at personal values. The CDS must face the emotional entanglements with her patients and their families. Often times going through the grief process with the family, sometimes gently directing them into the process. It's a time of extreme caring and requires alertness to the emotions and feelings of the family and patient with sensitivity to the whole hospital atmosphere often allowing a crisis within a crisis to be dealt with.

Activities are geared to each child on an individual basis by examining the patient's chart, observing his developmental level, temperament, physical condition, ethnic background, size of family and the child's placement within his family. The CDS can work directly/indirectly with the physical therapist to re-establish and maintain gross/fine motor skills. In such cases, tossing yarn balls, squeezing rubber balls, body bends and similar kinds of activities are used for immobile patients. Preschoolers enjoy board games made by the CDS, adapting shapes, colors, numbers and letters for matching, seriation, sequencing, and classifying. Pre-adolescent patients are competitive and enjoy socializing with activities centered around timed events, win-lose board games with the patients being 1st winner, 2nd winner, etc. Almost all of the patients enjoy being read to and appreciate books from the playroom library or the CDS. The CDS can bring about a social setting in a natural way, gathering patients into the playroom for a storytime, or bring a board game in the room of an immobile patient. For the CDS, it is a most rewarding career to serve as a member of the pediatric team.

Conclusion

As an outcome of this and further research on the viability of this program, it is hoped that many hospitals in the area will recognize the need for a developmentally trained person on staff for pediatric patients--and later, additionally for adults. This would make hospital teams more nearly complete and provide for patients total care and continued growth.

References

Azarnoff, P., A play program in a pediatric clinic. Children, 1970, 17, 218.

Azarnoff, P., & Flegal, S., A Pediatric Play Program. Springfield, Ill.: C. Thomas, 1975.

Barnes, C.M., & Kenny, F.M., Measurement in management of anxiety in children for open heart surgery. Pediatrics, 49:250, 1972.

Bowden, M.S., How we did it: Family centered care in a large community hospital. J. of the Assoc. for the Care of Children in Hospitals, 1979,8:1, 14-17.

Bowers, J., Can you recognize childhood learning disorders? Nursing '77, Nov. 1977, 7:26.

Briggs, R.F., The hospitalized child faces emotional hazards. Hospital Management, May 1967, 103:90.

Brooks, M.M., Programmed play complements care. Hospitals, Aug., 1973, 47, 78.

Burling, K.A., & Collipp, P.S., Emotional responses of hospitalized children. Clinical Pediatrics, 8:641, 1969.

Cassell, S., Effects of brief puppet therapy upon the emotional responses of children undergoing cardiac catheterization. J. of Consulting Psychology, 1965, 29, 1-8.

Clark, D., Helping parents cope with their child's hospitalization. J. Assoc. Care Children in Hospitals, Fall 1979, 8:2, 32-35.

Cyphert, F.R., Back to school for the child with cancer. Nursing Digest, 1974, 2:48-53.

Epstein, M.H., Children with chronic pain -- Can they be helped? Pediatric Nursing, Jan.-Feb. 1978, 4:42-44.

Harvey, S., & Hales-Tooke, A., (Eds.). Play In Hospital. London: Faber & Faber, 1972.

Hardgrove, C., & Dawson, R. Parents and Children in the Hospital. Boston: Little, Brown & Co., 1972.

Issner, N. The family of the hospitalized child. Nursing Clinics of North America, March 1972, 7:5-12.

Kunzman, L. Some factors influencing a young child's mastery of hospitalization. Nursing Clinics of North America, March 1972, 7:13-26.

Lowit, I.M. Social and psychological consequences of chronic illness in children. Dev. Med. Child Neurol., Feb., 1973, 15:75.

Mahaffy, P.R., The effects of hospitalization on children admitted for tonsillectomy and adenoidectomy. Nursing Research, 1965, 14, 12-19.

Mathew, P.L., & Glasrud, P.H., Child Life Workers: Who are they and what are they doing? Children's Health Care, 1981, 10, 1:11-15.

McCue, K., Wagner, M., Hansen, H., & Rigler, D. Survery of a developing health care profession: Hospital 'play' programs. J. Assoc. Care Children in Hospitals, 1978, 7(1), 15-22.

Melamed, B.G., & Siegel, L.J. Reduction of anxiety in children facing hospitalization and surgery by use of filmed modeling. J. of Consulting and Clinical Psychology, 1975, 43, 511-521.

Petrillo, M., & Sanger, S., Emotional Care of Hospitalized Children. Totonto: J.B. Lippincott Co., 1972.

References

Plank, N., Working With Children In Hospitals (2nd Ed.), Chicago. Year Book Medical Publishers, Inc., 1977.

Ricks, F., & Faubert, R. Canadian Child Life/Non-Medical Programs In Hospitals. Children's Health Care, 1981, 10, 1:16-19.

Rutukoski, J., A survey of child life programs. J. Assoc. Care Children in Hospitals, 1978, 6, 11-16.

Skipper, J.K., & Leonard, R.C. Children, stress, and hospitalization: A field experiment. J. of Health and Social Behavior, 1968, 9(4), 274-287.

Spielberger, C.D. et al. State-Trait Anxiety Inventory: "Self-Evaluation Questionnaire." Consulting Psychologists Press, Inc., 1970.

Spielberger, C.D. et al. State-Trait Anxiety Inventory For Children: "How-I-Feel Questionnaire." Consulting Psychologists Press, Inc., 1970.

Swanson, V.M. Pediatric schoolroom: An oasis of normalcy. J. Assoc. Care Children in Hospitals, W 1979, 7 (3): 17-19.

Thompson, R.H. Showing them what you can do: A practical guide for evaluating Child Life programming. Children's Health Care, Sm 1981, 10 (1): 29-36.

Thompson, R.H., & Stanford, G., Coping with resistance to Child Life Programming. J. Assoc. Care Children in Hospitals, 1979, 7 (4):12-18.

Tisza, V.B., & Hurwitz, I. The use of a play program by hospitalized children. J. Am. Acad. Child Psychiatry, 9:515: 1970.

White, F.P., Keeping children happy though hospitalized. Medical Economics, 98, Feb., 1969.

Williams, Y.B., & Powell, M., Documenting the value of supervised play in a pediatric ambulatory care clinic. J. Assoc. Care Children in Hospitals, 1980, 9, 15-20.

Wolfer, J.A., & Visintainer, M.A., Prehospital psychological preparation for tonsillectomy patients: Effects on children's and parents' adjustment. Pediatrics, 1979, 64, 646-655.

Wolfer, J.A., & Visintainer, M.A., Pediatric surgical patients' and parents' stress responses and adjustment as a function of psychological preparation and stresspoint nursing care. Nursing Research, 1975, 24, 244-255.

Additional References

Campbell, D.T., & Stanley, J.C., Experimental and quasi-experimental designs for research on teaching. In N.L. Gage (Ed.), Handbook of Research on Teaching. Chicago: Rand McNally, 1963.

Coopersmith, S., Self-Esteem Inventories. Palo Alto, CA: Consulting Psychologists Press, Inc., 1981.

Jenkins, J., & Carson, D.K., Hospital Activity Checklist for Pediatric Patients. Unpublished Instrument, Texas Tech University, 1981.

Spielberger, C.D. et al., State-Trait Anxiety Inventory Manual. Palo Alto, CA: Consulting Psychologists Press, 1970.

Spielberger, C.D. et al., State-Trait Anxiety Inventory for Children Preliminary Manual. Palo Alto, CA: Consulting Psychologists Press, 1973.

DEVELOPMENTAL/EDUCATIONAL ASSESSMENT OF HANDICAPPED CHILDREN IN EARLY CHILDHOOD (PRESCHOOL) PUBLIC SCHOOL PROGRAMS

Ralph M. Hausman, Ph.D.
Ector County ISD
Odessa, Texas

Rubilee Nobel, M.Ed.
Ector County ISD
Odessa, Texas

A major difficulty continuously experienced in developing programs for preschool handicapped children has been the paucity of appropriate, educationally relevant assessment devices, particularly for the more severely involved, multiply handicapped children. A similar difficulty has been experienced within the severe-profound handicapped area. Frequently, both groups of students are placed within an educational program on the basis of age, communication skills and/or mobility since these children are often described in educational and psychological reports as "untestable." At best, such a placement procedure results in a random mixture of ability and skill development levels within each classroom setting or, at worst, in an inappropriate placement that may take months to remedy. This apparent dilemma could be attributed, in part, to the wide range of characteristics encountered within this particular population; in part, to the relative lack of training received on the university or college level by educational diagnostic or school psychology students with this level of student; and in part to a relative paucity of comprehensive assessment techniques developed for and standardized on this population.

PURPOSE

The general purpose of this presentation is to present a summary of a pilot study (conducted during the 1980-81 academic year) involving a tentative comparison of the results obtained on five teacher-administered assessment procedures with a small group of young, severely/profoundly handicapped children (all of whom had been "untestable" in the traditional sense). An interim report of a follow-up study currently being conducted within the Ector County (Odessa) I.S.D. Early Childhood Program is also offered.

ASSESSMENT PROCEDURES

In the pilot study, five separate assessment procedures were administered by each teacher and/or aide to the students on an as-time-allowed basis in such a manner as to insure no interruption in the daily programming. The specific procedures used (selected on the basis of the presenter's prior experience with a test, the use of a test in local programs, or the use of a test on a national level) were as follows:

(1) Denver Developmental Screening Test (DDST), William K. Frankenburg, M.D. & Josiah B. Dodds, Ph.D., University of Colorado Medical Center, Denver, Colorado.
(2) Pupil Developmental Progress Scale ("Monterey"), Author/

Editor unknown, Monterey Co. Office of Education, Special Education Department, P.O. Box 851, Salinas, California.

(3) Curriculum And Monitoring System (CAMS), Glendon Casto (Ed.), Walker Educational Book Corp., 720 Fifth Av., NY 10019.

(4) Behavioral Characteristics Progression (BCP), developed by the Office of the Santa Cruz County Superintendent of Schools, published by VORT Corporation, P.O. Box 11132, Palo Alto, California 94306.

(5) AAMD Adaptive Behavior Scale, Public School Version, Parts 1 and 2, K. Nihira, R. Foster, M. Shellhaas, H. Leland, N. Lambert, M. Windmiller, and L. Cole, American Association on Mental Deficiency, 5201 Connecticut Ave., NW, Washington, DC 20015.

RESULTS

Pilot Study (1980-81) -- With the exception of all correlations including the AAMD Adaptive Behavior Scale, Part 2 data, all Pearson Product-Moment Correlations obtained between the test summary scores were statistically significant (i.e., with the probability of error being less than .001 associated with all but one correlation). The lowest correlation obtained was between the DDST and the BCP (i.e., $r = 0.6525$, $p < .01$); the highest correlation was between the Monterey and the CAMS (i.e., $r = 0.9667$, $p < .001$). All correlations which included the AAMD Adaptive Behavior Scale, Part 2, data were non-significant as anticipated (due to the negative aspect of the data collected).

Follow-up Study (1982-83) -- Due to the time required for the completion of the AAMD ABS and the limited educational relevance of many subtests, it was excluded from the present study. Data collection, currently underway, will be completed by the end of the Spring semester. Of the data collected thus far on the DDST, Monterey and CAMS, all correlations obtained are statistically significant (at the .001 probability of error level). The lowest, i.e. 0.7571, was between the DDST and the Monterey; the highest, i.e., 0.9463, was between the Monterey and the CAMS.

IMPLICATIONS

On the basis of the data obtained as well as the teachers' subjective evaluations offered thus far, the following is recommended:

(1) The Denver Developmental Screening Test may prove most useful as the initial assessment procedure to be administered when a preschool, handicapped student applies for entry to an Early Childhood Education Program. Placement or classroom grouping could be based on the specific profiles displayed on the DDST.

(2) Following a specified period of time (e.g., 4 to 6 weeks) in the classroom situation, the teacher and/or aide could then conduct a more comprehensive evaluation utilizing the following test composite:

"Monterey":
- Gross Muscle subcomponent
- Expressive Language subcomponent
- Receptive Language subcomponent

CAMS:
- Fine Muscle subcomponent
- Self Help Skills area
  - -- Feeding
  - -- Personal Care
  - -- Dressing
  - -- Toileting
- Social Emotional subcomponent

BCP:
- Auditory Perception (Strand #13)
- Visual Motor ((Strand #14)

Research in Action II...
Early Childhood Track

EXPRESSIVE COMMUNICATION RESPONSES OF YOUNG CHILDREN TO STORYTELLING

Hazel Marsicano, Ed.D.
West Virginia University
Morgantown, West Virginia

Storytelling continues to be a well-loved activity for young children. This article summarizes a research study which examined the impact of bombarding young children daily with three different methods of storytelling accompanied by consistent follow-up activities.

Purpose of the Research

The purpose of this study was to examine the impact of three different methods of presenting stories on the expressive communication responses of young children. To determine comprehension, it focused on the appropriateness of responses to a set of follow-up experiences which began with simple recall and continued to include both verbal and non-verbal activities to promote critical thinking, inferences, generalizations, and predictions. Secondary purposes included an examination of the impact of the three different methods of storytelling on the syntactic complexity of children's responses as measured by the mean number of total words, total sentences, words per sentence, and T-units per sentences produced.

Hypotheses

The hypotheses of this research were:

- H_o1 Method C will elicit a significantly greater number of total appropriate responses to follow-up experiences than methods A or B.
- H_o2 Method B will elicit a significantly greater total number of appropriate responses to follow-up experiences than Method A.
- H_o3 Responses to Method C will be significantly greater in syntactic complexity than responses to Methods A or B.
- H_o4 Responses to Method B will be significantly greater in syntactic complexity than responses to Method A.

Rationale for the Hypotheses of This Research

Researchers suggest that children enjoy most those stories which can be related to past meaningful experiences (Huck, 1968; Ross, 1980; Shedlock, 1952; Tooze, 1959). By building on concrete experiences, children develop complex hierarchical mental structures which function as a clearinghouse for storage, retrieval, and future usage of language and thought. Story schema (the child's mental set for stories) is constructed by listening to many well-formed stories and from experience (Mandler & Johnson, 1977). It is believed that the development of story schema facilitates memory and comprehension skills and serves as a mental set of expectations for story structure (Mandler & Johnson, 1977; Stein, 1979; Stein & Nezworski, 1978; Whaley, 1981). Thus, the hypotheses were based on the assumptions that well-formed stories containing clearly defined story elements would provide continuity of learning and allow for greater predictability of story structures. It was also assumed that stories selected on the basis of the children's developmental levels and experiential backgrounds would allow them to relate past experiences to the storytelling situation and foster higher levels of thinking and more overall expressive responses. Therefore, the following groups of stories were selected.

Method A: Five different and unrelated stories representing a wide range of literary styles, syntactic complexity, and interests were chosen. These stories were selected as being similar to the range and types of stories usually presented to young children during storytelling sessions. They included: *Snow White*, *Goggles*, *Leo the Lop*, *The Giving Tree*, and *Henny Penny*.

Method B: Curious George Stories

These stories were selected on the basis of the child's familiarity with the variety of activities in which the main character became involved. Story structures were clearly defined. George was involved in different events with different characters in each story except for the consistency of his relationship with the man in the yellow hat. It was assumed that these stories would provide a basis for experiences with which the child could relate and expand his thinking to make inferences and generalizations about George's involvement in future stories. Stories from this series selected for presentations were: *Curious George*, *Curious George Rides a Bike*, *Curious George Flies a Kite*, *Curious George Gets a Medal*, and *Curious George Goes to the Hospital*.

Method C: Winnie-the-Pooh Novel

Winnie-the-Pooh has long been recognized as an adorable, cuddly friend of Christopher Robin. The story structure including characters remains consistent and predictable. Characters with their clear-cut identifiable characteristics pop in and out of the various episodes contributing to the daily events in the life of "Pooh". The rationale for selection of this novel was that children would become familiar with a variety of characters and a predictable story structure and thus use their story schema to go beyond the level of recall to higher orders of critical thinking and evaluation to make inferences, generalizations and predictions about new and different story structures involving favorite characters.

Methods and Procedures of the Research

Subjects were 46 kindergarten children attending three classes in two different public schools in West Virginia. Examiners were Master's degree level students attending West Virginia University trained in the techniques of storytelling. The three different methods of storytelling were presented over a four week period with each method being used for five consecutive school days. To prevent any possible cumulative effects, the three methods were presented in a different order to each of the three groups of children. After presentation of each story, children were interviewed individually according to a set of questions and directions. Responses were scored categorically as appropriate or inappropriate for each question. Verbal responses were tape-recorded and later transcribed for determining the impact of the three different methods on the children's expressive responses; each group participated in an unfamiliar story that was not included in this study. A simple analysis of variance was the method used to analyze the data.

Results, Implications, and Suggestions for Application

No significant differences were found between the means of the three groups as measured by the neutral story at the beginning of the study. Results also failed to support hypotheses #1 and #3. However, statistically significant differences were found favoring Method B, Curious George stories (hypotheses #2 and #4), for both the total number of appropriate responses and greater syntactic complexity as measured by the mean number of total words and total sentences. In addition, the children continued to discuss or act out Curious George's behavior in other group activities after the storytelling sessions. Moreover, the Curious George books were recently selected by the children in this study as being among their favorite stories. This implies that listening to well formed stories to which children can relate past meaningful experiences enhances both language and thinking skills.

Storytelling Suggestions for Teachers and Caregivers of Young Children

1. Interview children and their parents to determine children's interests, developmental levels, and experiential backgrounds before beginning storytelling experiences.
2. Select stories you enjoy. Read them thoroughly, then practice telling them.
3. Set aside time for storytelling every day.
4. Plan ahead for storytelling. Include pre-story, story, and post-story experiences that require both verbal and non-verbal responses to assess comprehension. Use a variety of activities that include not only recall, but higher levels of thought such as critical thinking, making inferences, generalizations, and predictions.
5. Involve the children as active participants in pre-story, story, and follow up experiences by relating the story to meaningful real-life experiences.
6. Keep a record of children's favorite stories. Read or tell them often.
7. Ask children to discuss how two or more stories are alike or different, and what they like or dislike about each.
8. Encourage children to retell stories with and without props such as flannel board materials. Record their knowledge of story elements.

9. Encourage children to tell a whole story after your telling of just the setting (i.e., locale, time, and introduction of main characters).
10. Keep records on the types of questions children respond to as a result of storytelling.
11. Keep records on language skills children develop as a result of storytelling.
12. Enjoy storytelling and show the children that you do!

Bibliography

Blank, M. and Frank, S.M. Story recall in kindergarten children: Effect of method of presentation on psycholinguistic performance. *Child Development* 42: 299-312, 1971.

Bloom, L. *Language Development: Form and Function in Emerging Grammars*. Cambridge, MA: The M.I.T. Press, Research Monograph No. 59, 1970.

Brewer, W.F., Lichtenstein, E.H. Event schemas, story schemas, and story grammars. Technical Report No. 197. National Institute of Education (DHEW), Washington, D.C., Dec. 80, ED 199 688.

Elliott, A.J. *Child Language*. Cambridge: The Cambridge University Press, 1981.

Ferguson, C.A., and Slobin, D.I., eds. *Studies of Child Language Development*. New York: Holt, Rinehart and Winston, Inc., 1973.

Flood, J. and Lapp, D. Language/reading instruction for the young child. New York: Macmillan Pub. Co., Inc., 1981.

Glenn, C.G. Relationship between story content and structure. *Journal of Educational Psychology*, 72: Number 1 550-560, August, 1980.

Huck, C.S. *Children's Literature in the Elementary School*. 2nd ed. New York: Holt, Rinehart, Winston, 1968.

Laberge, D., and Samuels, S.J. *Basic processes in Reading: Perception and Comprehension*, Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers, 1977.

Loban, Walter. *Language Development: Kindergarten through Grade Twelve*. Urbana, IL: NCTE, 1976.

Loban, Walter. *The Language of Elementary School Children*. Champaign, IL: NCTE, 1963.

Luria, A.R. *Speech and the Development of Mental Processes in the Child*. London: Staples Press, 1959.

Lay, M.Z. and Dopyera, J.E. *Becoming a Teacher of Young Children*. Lexington, MA: D.C. Health and Co., 1977.

Mandler, J.M. and Johnson, N.S. Remembrance of things passed: Story structure and recall. *Cognitive Psychology*, 9: 111-141, 1977.

McConaughy, S.H. Developmental changes in story comprehension and levels of questioning. *Language Arts* 59: Number 6 580-589, Sept. 1982.

McConaughy, S.H. Using story structure in the classroom. *Language Arts*. 57: No. 2, 157-165, February, 1980.

McCormick, S. Reading aloud to preschoolers age 3-6: A review of the research. Paper presented at the Annual Meeting of the South Regional Conference of the International Reading Association. (9th, San Antonio, TX: Jan. 29-31, 1981) ERIC ED 199 657.

McGhee, L.M. Awareness of text structure: Effects on children's recall of expository text. *Reading Research Quarterly*, 17 no. 4, 581-90, 1982.

McGhee, L., *et. al*. Melalinguistic knowledge: Another look at beginning reading. *Childhood Education*, Special Issue 59, No. 2, p. 123-128, Nov/Dec 1982.

Meringoff, L. Influence of the Medium on Children's Story Apprehension, *Journal of Education Psychology*, Vol. 72, No. 2 (1980), pp. 240-249.

O'Donnell, R.C., Griffin, W.J., and Norris, R.C. Syntax of Kindergarten and Elementary School Children: A Transformational Analysis. Champaign, IL: NCTE, 1967.

Peterson, G. Story structure: Comments on Recent Literature. 1979, ERIC ED 194 883.

Ross, R. Storyteller. 2nd ed. Columbus, Ohio: Charles E. Merrill Publishing Co., 1980.

Rumelhart, D.E. Understanding and summarizing brief stories. In David La Berge and S. Jay Samuels (Eds.) Basic Processes in Reading: Perception and Comprehension. Hillsdaly, N.J.: Lawrence Erlbaum Associates, Pub., 1977.

Sadow, M.W. The use of story grammar in the design of question. Reading Teacher, 35.518-22, February 28.

Sawyer, R. The way of the storyteller. New York: Viking Press, 1962.

Shedlock, M.L. Art of the storyteller. 3rd ed., revised. New York: Dover Publications, Inc., 1952.

Smardo, F.A. and Curry, J.F. What research tells us about story hours and receptive language. NIE Project Report, 1982.

Stein, N.L. and Glenn, C.G. An analysis of story comprehension in elementary school children. In R. Freedle (Ed.) Multi-Disciplinary Approaches in Discourse Comprehension. Hillsdale, NJ: Ablex, 1977.

Stein and Nezworski. The effects of organization and instructional set on story memory. Discourse Processes 1:177-193, 1978.

Stein, N.L. How children understand stories: a developmental analyses. In Current Topics in Early Childhood Education, Vol. 2, ed. Lillian G. Katz. Hillsdale, NJ: Ablex, 1979.

Stewig, J.W. and Sebesta, S.L. (Eds.) Using Literature in the Elementary Classroom. Urbana, IL: NCTE, 1978.

Taylor, E. Confirming story grammar structures. Paper presented at the Annual Meeting of the National Reading Conference (30th, San Diego, CA: Dec. 306, 1980) ERIC ED 199 643.

Thorndyke, P.W. Cognitive structures in comprehension and memory of narrative discourse. Cognitive Psychology. 9: Vol 77-110, Jan. 1977.

Tooze, E. Storytelling. Englewood Cliffs, NJ: Prentice-Hall, 1959.

Whaley, J.F. Story grammar and reading instruction. Reading Teacher. 34: 726-71. April, 1981.

Whitehead, R. Children's Literature: Strategies of Teaching. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1968.

THE DEVELOPMENT OF MATH-GRAPHING AND CHARTING SKILLS IN YOUNG CHILDREN

Barbara Gibson
West Virginia University
Morgantown, West Virginia

Roy Moxley
West Virginia University
Morgantown, West Virginia

Kathy Blouiarz
West Virginia University
Morgantown, West Virginia

Geometric shapes, particularly in the form of blocks that could be assembled into cubes, were the basis of Froebel's "gifts" for children. These gifts were intended to awaken the minds of children to the underlying geometrical forms and mathematical relationships in nature (Leeb-Lundbert, 1970). Since then, experiments examining children's actual responses to blocks have provided insight into the child's development of concepts in various areas, including storytelling (Applebee, 1978; Vygotsky, 1972). In particular, there has been a strong interest in using mapping and graphing activities with blocks for the development of specific math concepts (cf. Christopher, 1982; Payne, 1975).

The West Virginia University Nursery School has developed a technique of using wooden color one-inch square cubes and graph paper to enhance pre-math, language arts, and social skills with three and four year olds. This research was implemented on September 15, 1982, and has been ongoing since its conception.

Method

Subjects

The subjects consisted of twelve four year olds that were enrolled in the WVU Nursery School in Morgantown, West Virginia.

Materials

One-inch cubical counting blocks of four different colors and one-inch graph paper were used.

Procedure

The activities were conducted with a group of four children at one time as one of their small group activities. Each child was given a piece of graph paper that had a designated number of one-inch squares marked off. Both children and teacher had the same model. All 100 blocks were scattered in a pile on the floor and the children sat in a semi-circle around the pile of blocks. The teacher gave the instructions as she demonstrated the procedure to the children. In the first activity, the child was to fill in the sectioned-off pattern with blocks of all the same color. This relatively simple activity was chosen so that each child would be successful in his first activity. The next activity was a Piagetian related task. The child was asked to do section one first and fill in each of the marked squares with the same color of blocks. Section one used four blocks on the same line with one space between each block. Children having problems were helped by a neighboring child. The child was then asked to do part two, where four blocks on the same line were next to each other, with no spaces between them. Finally, the child was asked to do part three, where four blocks were arranged in a zigzag pattern on two lines, with spaces between each block.

The child was then presented a marked-off diagonal section and asked to copy the teacher's pattern by choosing the same colors the teacher used. It was found that the children had some difficulty both in matching the teacher's color pattern and in producing a diagonal pattern. This was not surprising since they were asked to do an additional task requirement and since children typically encounter difficulty at first in drawing diagonal lines.

Other graphing activities included filling in a space when only the outline was sectioned off instead of each individual square and stacking blocks to make cubes and pyramids like the teacher's.

When demonstrating the task the teacher always made certain that her paper was turned toward the children so it didn't present a mirror effect for them. Also, all activities were done from left to right.

Results

It was found that children had a more difficult time when the pattern included diagonal sections and when only the whole pattern was sectioned instead of each individual square in the pattern. Activities were less difficult when the children used blocks of their own color choice instead of following the teacher's color pattern. Activities with less variation in pattern were easier than more elaborate patterns.

In addition to matching patterns with their blocks, the children also graphed records of their observations. These charting activities were done with groups of four children on alternate days with the pattern matching. The charting questions were printed on graph paper sectioned off in one-inch squares or on plain white paper. The following charting questions were used on different days:

1. What are your favorite holidays?
2. Who is wearing the following items?
3. What month is your birthday?
4. What are your favorite fruits?
5. What are your favorite activities?
6. What is your favorite time of day?
7. What are your favorite colors?
8. What are your favorite drinks?
9. What letter does your name start with?
10. What color are your eyes? (observed in a mirror)
11. What is the color of your hair?

12. What are some of your favorite toys?
13. What is your favorite food for breakfast?

The questions were selected so that the children had a choice between four or five different answers. When they had made their decision, each child put a one-inch cubical block in the appropriate space for that choice. When every child had made a selection, each child then removed his block and marked an X or put a sticker in its place. This made a permanent record of their charts, which were put up on the wall for later viewing. Parents were very interested in the charting answers of their children.

Children also kept a record of their observations over time in a subsequent activity of charting the weather. After deciding if it was snowy, rainy, sunny, or cloudy, the children drew a picture to represent their choice. The drawings that can be used here, such as the sun figure, are ones that children learn to do early in their development of drawing skills. If they can't draw a picture, the children can paste an appropriate sign to represent the weather for that day; e.g., cotton balls for clouds or white rice for snow. Over time, the cumulative record of their observations can be used for the children to decide which week or month had the most sunny, snowy, rainy, or cloudy days.

Benefits

Placing cubical counting blocks on corresponding squares of graph paper to match a pattern and using blocks or other signs to represent a corresponding observation are activities with numerous benefits for the nursery school child. Some of these are listed below.

1. Children receive clear and immediate feedback on their efforts and are allowed to make changes until they have successfully completed the task. All children were able to complete these tasks successfully before they left the activity. In this way, children were learning to "debug" their solutions to problems without feeling that the correct answer must be given in one step.
2. Children's fine motor coordination is developed in picking up a block and placing it in a designated place.
3. Children are learning to discriminate different visual patterns.
4. Children are working together and helping one another, which encourages peer tutoring and cooperative relationships.
5. Children are learning one-to-one correspondence. The child matches a block to a space or a block to another block. In charting observations, the child matches a block to an observation and a checkmark to a block.
6. This early experience with symbolic representations for physical events is related to early writing and reading skills in which the symbolic representations are constructed out of letters and words.

7. The pattern matching can also be regarded as a preparation for printing with letter tiles. First of all, the task of placing a cube in a particular space is much simpler than placing a letter beside another letter. Letters have a correct orientation for their positioning whereas a block is a block no matter which wsy it is placed. Placing blocks in particular sequences, such as left to right, gives the child experiences in both positioning and directional sequencing which should help to simplify the task of orienting letters properly.
8. Making records of actual physical events is also a classification skill. When this is done over time, children are learning how to record changes in events over time. When they do this and comment on their classifications and the changes they observe, children are engaging in scientific inquiry.
9. The integration of block patterns and the graphing activities lends itself not only to the development of more advanced math and science skills, but to self-recording and self-management in other areas of the curriculum as well.

References

Applebee, A.N. *The Child's Concept of Story: Ages Two to Seventeen.* Chicago: The U. of Chicago Press, 1978.

Christopher, L. "Graphs Can Jazz Up the Mathematics Curriculum." *Arithmetic Teacher* 30, no. 1 (September 1982): 28-30.

Leeb-Lundberg, K. "Kindergarten Mathematics Laboratory--Nineteenth-Century Fashion." *The Arithmetic Teacher* 17, no. 5 (May 1970): 372-386.

Payne, J.N., ed. *Mathematic Learning in Early Childhood: Thirty-seventh Yearbook National Council of Teachers of Mathematics.* Reston, Virginia: The National Council of Teachers of Mathematics, 1975.

Vygotsky, L.S. *Thought and Language*, edited and translated by E. Hanfmann, G. Vakar. Cambridge, Mass.: The M.I.T. Press, 1962.

CURRICULUM FOR EMPATHIC ENRICHMENT

Janice Strand
Roswell, New Mexico

Research in the area of empathic development has formed an incomplete array of conclusions. Perspective-taking by young children has been shown to relate to empathy (Buckley, Siegel, & Ness, 1979), and was considered by Piaget to be an element of cognition. The work of Abroms and Gollin (1980), surveying 3-year-old children having above average IQ, found that mental age scores related more strongly with interpersonal awareness than did IQ score. This supported work by Rubin (1978) that found a relationship between IQ and interpersonal awareness when chronological age was controlled.

The purpose of this research project was to determine the relationships of IQ score, spatial perspective-taking ability, empathic awareness, and empathic reactions among young children having a broad range of intellectual abilities.

Sample

Sixty-five children (33 female and 32 male) between the ages of 4 years and 6 years, 6 months (Mean = 5 yr., 2.4 mo.) participated in the study. (See Table 1 for age group means.) All children of this specific age group who were attending a Head Start program, two private day care programs, a private preschool, three public kindergarten classes, and a public school first grade class were recruited; children whose parents returned consent forms were included in the study. The children represented varied socioeconomic levels.

Table 1

Chart of age groupings by sex

	4 yr.	Mean	5 yr.	Mean	6-6½ yr.	Mean
Male	13	4.53	13	5.44	6	6.17
Female	15	4.44	13	5.33	5	6.33
Total	28	4.48	26	5.38	11	6.24

Measures

The Slosson Intelligence Test (1963) was used to determine the IQ level and mental age of each of the children. A perspective-taking task similar to the Borke (1975) task was developed and administered to assess understanding of another's spatial perspective. An interpersonal awareness test similar to the Borke (1971) test was developed and administered to assess awareness and identification of another child's feelings. An affective situations test similar to the Feshbach and Roe (1968) test was developed and administered to assess empathic affective reaction.

Results

A Product-moment Coefficient of Correlation (*r*) was used to determine the relationships between the variables. (See Table 2 for range, mean, and standard deviation for each variable; see Table 3, for correlations.) Positive, significant relationships were found between IQ and empathic awareness, between IQ and empathic reaction, and between IQ and perspective-taking. Similar relationships were found between Mental Age (MA) and the variables of empathic awareness, empathic reaction, and perspective-taking. Positive, significant relationships were also found between chronological age and the variables of empathic awareness, empathic reaction, and perspective-taking. The *t*-test was used to determine possible differences between girls' abilities and boys' abilities. No significant differences were found.

Conclusions and Implications

This research has found a positive, significant relationship between the cognitive factors of IQ, MA, and perspective-taking as well as between the cognitive factors and the affective empathic factors; thus, it would appear that general level of cognitive ability can be used as an indicator of empathic understanding. The data show the same type of relationship between chronological age and the perspective-taking and empathic factors. This indicates that as children advance in preschool and early elementary years, they are more accurate in their perceptions of another person's physical and social points of view.

These results generate implications for parenting, for preschool education, and for professionals in the helping professions. Parents, educators, and other professionals can be alerted to signs of levels of cognitive abilities and levels of social cognition. Stories, films, television programs, etc. can be analyzed and used as a basis for discussion, roleplaying, and induction to nurture the development of cognitive and social cognitive abilities. Structures created during free play and block play can be used for individual and group analysis leading to further understanding of spatial perspective. The outdoor experiences of nature walks, bus riding, and field trips can be ideal settings for pointing out emotional experiences as well as new types of spatial perspectives such as being elevated above something and driving toward, around, or away from something (Strand, 1982).

Parents and educators, if made aware of the relationships between general cognitive factors and social cognitive factors, might set different social goals for children and become more aware of their

Table 2

Ranges, Means, and Standard Deviations of Cognitive and Affective Variables

Variable	Range	Mean	S.D.
IQ	69-170	119.892	18.2941
MA	37-106	74.892	14.0254
Perspective	0-9	5.123	3.0408
Awareness	0-16	8.738	4.0431
Reaction	1-13	7.046	2.5373

Table 3

Product-moment Coefficients of Correlation (r)

Variable	1	2	3	4	5	6
1. Age		.007	.615***	.472***	.543***	.499***
2. IQ			.784***	.485***	.381**	.473***
3. MA				.673***	.626***	.684***
4. Perspective					.608***	.609***
5. Awareness						.684***
6. Reaction						

df = 63

** $p < .01$

** $p < .001$

own role in the social development of the children. Parents can be encouraged to help children think through emotional situations that the child experiences or observes, focusing on the feelings of the person(s) directly involved in the situation as well as the observed reactions of those indirectly involved. Parents and educators can be encouraged to observe and evaluate the affective reactions of children as emotional situations arise. The results of this study indicate that significantly different levels of empathic awareness and empathic reaction can be expected from children of different age and general ability levels.

The indication that IQ level may reflect a level of ability of empathic awareness and empathic reaction, when the variation in IQ scores is not restricted, deserves recognition. Such a finding presents a challenge for further study which could lead to the implementation of special affective-related curricula for programs for the gifted and talented.

References

Abroms, K.T. & Gollin, J.B. Developmental study of gifted preschool children and measures of psycho-social giftedness. *Exceptional Children*. 1980, 46, 334-340.

Borke, H. Interpersonal perception of young children: Egocentrism or empathy. *Developmental Psychology*, 1971, *5*, 263-269.

Borke, H. Piaget's mountains revisited: Changes in the egocentric landscape. *Developmental Psychology*, 1975, *11*, 240-243.

Buckley, N., Siegel, L.S., & Ness, S. Egocentrism, empathy, and altruistic behavior in young children. *Developmental Psychology*, 1979, *15*, 329-330.

Feshbach, N. & Roe, K. Empathy in six and seven year olds. *Child Development*, 1968, *39*, 133-145.

Rubin, K.H. Role taking in childhood: Some methodological considerations. *Child Development*, 1978, *49*, 428-433.

Slosson, R.L. Slosson Intelligence Test for children and adults. New York: Slosson Educational Publications, Inc., 1963.

Strand, J.K. *Relationship between empathy, IQ, and perspective-taking in young children*. Unpublished thesis, Texas Tech University, Lubbock, Texas, 1982.

THE IMPACT OF PARENT ATTITUDES ON CHILDREN'S MATH ABILITIES

Mary Seay
Texas A & M University
College Station, Texas

This correlation study examined the relationship between parents' conceptions of their own math ability and their youngster's perception of her/his ability to work at and understand mathematics. By looking at attitudes which might be prejudicial to math concept learning within the family unit, the researcher hoped to give teachers some insight into mathematics phobias in children.

Rese[illegible] in the last few years on attribution theory suggests that predictable behavior results from family attitudes. Since positive attitudes toward math and teaching techniques to meet varied learning styles are crucial to math development, the concerns addressed in this study should reflect the concerns of both parents and teachers.

There have been a number of recent studies (Tobias, 1976; Bulmahn and Young, 1982) relating to "math anxiety" and the possible significance of biological and environmental factors on mathematics achievement (Fennema,1974; Hilton and Borglund,1974). It is generally recognized that a person's environment has some kind of effect on her or his mathematic interest and ability.

A study by Bulmahn and Young (1982) on teacher interest posed the hypothesis that the kind of person drawn to elementary school teaching is not necessarily the person who enjoys mathematics. Many of the preservice elementary teachers in the study said math was their worst subject and that their career options had been limited by their poor math abilities. Most alarming was the notion that elementary teachers did not really have to be very good at math.

If both parents and teachers communicate some "math anxiety" to their students and relay the information that their attitudes toward math are negative, would a student have enough self-confidence in his own math abilities to be able to overcome these hurdles?

Math has always been a kind of bottom line of sex differences: boys were always superior to girls--a prejudice shared by most professional mathematicians (Tobias, 1982). That gap is closing. In 1970 only 6% of the PhD's awarded in mathematics were awarded to women; by 1980, the number had risen to 14%.

Both sex and developmental stage seem to be related to quantitative ability. There appear to be no sex differences prior to adolescence after which, boys move ahead and have shown consistently superior performance (Maccoby and Jacklin, 1974).

Lips and Calwill (1978) suggested that adolescent males may be superior in math performance because, in response to societal expectations, they take more math courses. They may also see mathematics as being more useful to them in real life and also perhaps because of biases of parents, teachers and peers.

The Johns Hopkins program, which is designed to enhance and encourage the math abilities of junior high age students, uses SAT scores in their talent search. They found the top scoring students to be male; however, the difference is narrowing. By 1980 only one single boy outscored the highest girl. In 1972, 19% of the boys outscored girls; by 1981, it was 2%.

Mary Gray and Alice Schafer, professors of mathematics at American University, challenged the idea that SAT's really measure math reasoning. Most test questions require a knowledge of techniques: either a child has been shown how to find a square root or she has not. Some clues as to these scores are offered in Tobias (1982): (1) Parents of boys were found to be working at preparing their boys for SAT's. Girls' parents were not. (2) Boys reported systematically studying science and mathematics textbooks with their teachers to prepare for their SAT's. Girls did not. Helen Auston (1974) reported that parents of daughters accepted into the program at Johns Hopkins were often surprised to learn that their daughters had mathematical talent, but no boys' parents were surprised. They were well aware of their sons' abilities and were at work developing them. Tobias (1982) felt it unreasonable to assume that males and females have had identical exposure to math. Many variables exist other than parents attitude toward mathematics: ball play, compass orientation, practice in spatial thinking, repairing mechanical objects, math-related play, out-of-school problem solving, science projects activities, and taking and using measurements, among others.

Girls have traditionally been reinforced for behavior which is different from that for which boys are reinforced. Healthy behavior for a girl has not always included being excellent in mathematics. Fifth and sixth grade girls exhibiting the "male" traits of persistence, assertiveness, independence, and curiosity were found to be less well-liked by their teachers than more feminine girls. Is this negative type of reinforcement at work in school as well as in the home?

The presence of modeling is an important factor in achievement. There have been far fewer female role models in our society than males. This fact may also have been crucial in some apparent sex difference in achievement.

STUDY

The present study looked at the changing attitudes of boys and girls over developmental periods as compared with their parents' attitudes toward math.

The subjects were third, fifth, and ninth grade students in rural and suburban school districts with low (class A & AA) and large (class AAA) enrollments. A questionnaire designed to tap attitudes in both parents and children relating to their perceptions of their math abilities was completed by mother, father, and student. Responses were indicated on a 5 item Likert Scale to such questions as:

1. I enjoyed my math classes.
2. I found it difficult to understand my math teacher's explanations.
3. I want to use (are using) some aspect of math in my job.

RESULTS

Some interesting facts emerged from the results of this study. A correlation was run of all boys and all girls across geographic locations for evidence of differences among the students, with the results that

1) girls showed no statistical differences in math attitudes no matter where they lived. (F = 1.47, p = .27 for third grade; F = 1.23, p = .33 in fifth).
2) boys showed no statistically significant differences. (F = 1.47, third; F = .23, p = .80, fifth).

The correlations between the students and their parents also showed

1) a statistical difference between girls' attitudes and their fathers' attitudes with the girls feeling more positive about their math abilities than their fathers. (F = 4.9 with means 36.0 - girls, 32.8 - fathers at alpha = .05).
2) a significance difference between girls' attitudes and their mothers', with the girls being more positive than their mothers as well. (F = 6.15, means, 36 - girls; 32.3 - mothers).
3) no differences statistically between boys and their fathers, and their attitudes were less positive than were the girls'. (F = .09, means, 33.4 - boys, 33.9 - fathers). There was also no significant difference between boys and their mothers' math attitudes. (F = 1.67, means, 33.4 - boys, 30.6 - mothers).

Over the three areas, no significant differences were found between girls and boys (F = 3.147); however, the mean of the girls was higher (36.8 - girls, 33.4 - boys).

The results are summarized in the table.

MEANS AND F VALUES OF ALL GIRLS AND BOYS WITH ALL MOTHERS, ALL FATHERS (alpha = .05)

	MEANS		F VALUE	
	all girls	all boys	all girls	all boys
	36.03	33.4		
Fathers	32.8	33.9	4.9	.09
Mothers	32.3	30.6	6.15	1.67

The conclusions that can be drawn are that girls' attitudes toward their own math abilities are becoming more positive, no matter what their parents' attitudes are; and that boys tend to reflect the attitudes of their parents. This is a step in the right direction for girls, at least to the ninth grade level. What happens to them socially beyond that may make a difference. It should not be too surprising to conclude that a positive home attitude regarding math will not adversely affect children. What the interaction between teachers' negative attitude and the child's positive attitude is yet to be seen.

References

Auston, H.S. and Bayer, A.E. Sex discrimination in academe. Educational Record, 1972, 53, 101-118.

Bulmahn, Barbara J. and Young, David M. On the transmission of mathematics anxiety. Arithmetic Teacher, November, 1982, 55-56.

Fennema, Elizabeth. Sex differences in mathematics learning. Why? Elementary School Journal, December, 1974.

Hilton, Thomas L. and Berglund, Gosta W. Sex differences in mathematics achievement: A longitudinal study. Journal of Educational Research, January, 1974.

Lips, Hillary and Colwill, Nina. Psychology of sex differences. Englewood Cliffs, New Jersey: Prentiss Hall, 1978.

Tobias, Sheila. Math anxiety. Why is a smart girl like you counting on your fingers? MS, September, 1976, 56-59, 92.

Tobias, Sheila. Sexist equations. Psychology Today, January, 1982, 14-18.

SELF-ASSESSMENT OF KNOWLEDGE AND TRAINING NEEDS FOR PERSONNEL SERVING PRESCHOOL-AGED HANDICAPPED CHILDREN: A RURAL-URBAN COMPARISON

William Wachtel, PhD.
El Paso I.S.D.
El Paso, Texas

Stephen W. Stile, PhD.
New Mexico State University
Las Cruces, New Mexico

Sandra Abernathy
New Mexico State University
Las Cruces, New Mexico

Both New Mexico and Texas are in need of more qualified instructors for preschool handicapped children. Improvement of instructors' skills can, in part, be accomplished through inservice training.

Two questionnaires were developed to assess the knowledge levels and perceived inservice training needs of those working in preschool programs in New Mexico and in El Paso Independent School District (EPISD). The New Mexico questionnaire contained eighteen items which were used to determine the perceived knowledge level and the inservice training needs of New Mexico State University's target population and to compare responses for New Mexico personnel working in rural and urban areas. Fifteen of these were comparable to items found on the EPISD instrument and were used to compare New Mexico urban responses with EPISD responses and to compare combined urban (EPISD and New Mexico urban) resonses with New Mexico rural responses.

Respondents' expressed relative knowledge levels and inservice training needs for each item on the questionnaire were ranked in order of importance. The nonparametric test, Wilcoxon rank sum test, was used to determine if there were differences between the various groupings. In all cases rural groups tended to perceive themselves as having lower knowledge levels and higher inservice training needs than the urban groups.

Methodology

Two self-report needs assessment instruments were constructed based upon information obtained in a 1982 ERIC search of documents pertaining to early intervention with handicapped children. A five-point Likert Scale was used for responses. The first instrument consisted of eighteen items and was sent to NMSU/USOE Project's target population to establish training needs for four regional workshops to be conducted during the 1982-83 Academic Year. The second instrument was constructed for purposes of long-range planning in the area of inservice training for El Paso Public School's early childhood education staff. Fifteen of the fifty items on the EPISD instrument corresponded to the NMSU instrument. Fiscal management of public school programs and Fiscal management of community-based programs were omitted because these are not areas of teacher responsibility. Criterion-referenced assessment was omitted since it was addressed indirectly by numerous items in the EPISD instrument which made comparison difficult.

The New Mexico instrument was sent to all personnel in the state identified as having a connection with preschool programs for the handicapped. These ranged from people in state human services agencies, curriculum coordinators, directors, teachers and aides of public, private and community-based programs. The EPISD instrument was sent to teachers and aides within the district who were actively engaged in teaching preschool handicapped children.

Respondents' expressed relative knowledge levels and inservice training needs for each item on the questionnaire were ranked in order of importance. The nonparametric test, Wilcoxon rank sum test, equivalent to the Mann Whitney U-test, (SAS User's Guide, 1979, pp. 331-34) was used to determine if there were differences between New Mexico rural and New Mexico urban groups, New Mexico urban and El Paso groups and between combined urban (New Mexico and El Paso) and New Mexico rural groups. For purposes of the present paper, it was determined that New Mexico urban responses would be those from personnel who indicated an Albequerque, Las Cruces or Santa Fe business address (Edington, 1983).

Results

The NMSU instrument was sent to 424 addresses found on a project mailing list. After six weeks, 140 responses were obtained (33.0%) of which 116 were usable. The El Paso instrument was mailed to thirty district personnel and after one and one half weeks, twenty responses were received for a response rate of 66.7%.

Table 1 lists the eighteen items ranked in order of expressed knowledge level by the respondents. Fiscal management for both public school programs and community-based programs were marked as areas in which respondents had the least knowledge. Customs and traditions of cultural groups and Student record-keeping systems were marked as areas in which respondents had the highest knowledge level.

Table 2 lists the same eighteen items in rank order according to respondents' expressed need for inservice training. Development of educational programs and Relevancy and use of school-specific languages were ranked as least needed and Identification/screening of high risk children and Parent training techniques were ranked as most needed. Not surprisingly, the two items indicated as lowest in knowledge level were ranked higher in inservice training needs, and the two knowledge level items marked highest were ranked low in need for inservice training.

Table 1 - Rank Order (low = 1, high = 5) of Knowledge Level in Eighteen Areas for the Total Group

ITEM	N	MEAN RANK	STD. DEV.
Fiscal management of public school programs for early childhood special education.	116	2.1	1.01
Fiscal management of community-based programs for early childhood special education.	116	2.3	1.10
Relevancy and use of school-specific languages (Spanish, Navaho, etc.).	135	2.7	1.32
Identification/screening of high risk children.	135	2.8	1.27
Providing public awareness and soliciting support for early childhood special education.	135	2.8	1.09
Use of early childhood/handicapped instructional materials.	135	2.9	1.23
Use of criterion-referenced assessment techniques and instruments.	116	2.9	1.20
Parent training techniques.	135	3.0	1.09
Use of developmental tasks approach to instruction.	135	3.1	1.01
Models for parent participation.	135	3.1	1.06
Behaviors of young handicapped children.	135	3.1	1.06
Application of operant behaviorism.	135	3.2	1.08
Child-abuse identification and reporting procedures.	135	3.2	1.16
Curriculum planning.	135	3.2	1.03
Development of individualized educational programs (IEP's).	135	3.2	1.14
Classroom/instructional management systems.	135	3.3	1.01
Customs and traditions of cultural groups represented by the student body.	135	3.3	1.13
Student record keeping systems.	135	3.3	1.08

Table 2 - Rank Order (low = 1, high = 5) of Need for Inservice Training in Eighteen Areas for the Total Group

ITEM	N	MEAN RANK	STD. DEV.
Development of individualized educational programs (IEP's).	135	2.9	1.36
Relevancy and use of school-specific languages.	135	2.0	1.30
Customs and traditions of cultural groups represented by the student body.	135	2.9	1.32
Student record keeping systems.	135	3.0	1.23
Classroom/instructional management systems.	135	3.1	1.20
Application of operant behaviorism.	135	3.1	1.23
Curriculum planning.	135	3.1	1.28
Use of criterion-referenced assessment techniques and instruments.	116	3.3	1.25
Fiscal management of community-based programs for early childhood special education.	135	3.4	1.22
Fiscal management of public school programs for early childhood special education.	135	3.4	1.31
Child-abuse identification and reporting procedures.	135	3.4	1.33
Use of developmental tasks approach to instruction.	135	3.4	1.12
Providing public awareness and soliciting support for early childhood special education.	135	3.5	1.23
Behavior of young handicapped children.	135	3.6	1.23
Models for parent participation.	135	3.6	1.06
Use of early childhood/handicapped instructional materials.	135	3.6	1.23
Identification/screening of high risk children.	135	3.8	1.26
Parent training techniques.	135	3.8	1.19

A comparison was made between combined urban and New Mexico rural groups. The greatest number of significant differences were found when these two were compared. Of the eighteen knowledge level items, five were significantly different. These were Application of operant behaviorism, Use of early childhood/handicapped instructional materials, Behaviors of young handicapped children, Parent training techniques and Identification/screening of high risk children. In all instances the rural group indicated a lower knowledge level. Four inservice training items were found to be significantly different between the two groups. These were Application of operant behaviorism, Use of early childhood/handicapped instructional materials, Behaviors of young handicapped children, and Child-abuse identification and reporting procedures. Again, the rural group indicated a greater inservice training need than the combined urban group. Tables 3 and 4 display those items which were found to be significantly different for these groups.

Conclusion

In all cases the differences between urban and rural groups in the area of perceived knowledge and inservice training needs indicated that rural groups tended to perceive themselves as less highly trained than their urban counterparts and that training needs should focus on fundamental aspects of early childhood/handicapped education such as Use of early childhood/handicapped instructional materials, Behaviors of young children, and Application of operant behaviorism.

The comparison of a combined urban group (EPISD and New Mexico urban) with New Mexico rural indicates that urban preschool personnel appear to have more formal training as indicated by relative knowledge levels. This trend reinforces the commonly-held belief that urban areas have access to more qualified instructors. Three of the areas that were significantly different in knowledge level were also significantly different in need for additional inservice training. The combined urban group marked knowledge of Application of operant behaviorism, Use of early childhood/handicapped instructional materials and Behaviors of young handicapped children as significantly higher than the rural group, whereas the rural group indicated a significantly greater need for inservice training in these areas than did the urban group.

The results of the two questionnaires indicated many similarities in the level of knowledge and the need for inservice training of early childhood/handicapped instructors. However, it would appear that inservice training of rural early childhood/handicapped instructors should focus on areas that are usually included in formal preservice training programs.

Table 3. Knowledge Level Items Found to be different Between Combined Urban and New Mexico Rural Groups

ITEM	COMB. N	URBAN RANK	NM N	RURAL RANK	F	P
Application of operant behaviorism	38	3.7	97	3.0	13.45	0.001
Use of early childhood/ handicapped instructional materials	38	3.4	97	2.6	15.44	0.001
Behaviors of young handicapped children	38	3.6	97	2.9	12.05	0.001
Parent training techniques	38	3.6	97	2.7	18.19	0.0002
Identification/screening of high risk children	38	3.1	97	2.6	4.79	0.04

Table 4 . Inservice Training Needs Found to be Different Between Combined Urban and New Mexico Rural Groups

ITEM	COMB. N	URBAN RANK	NM N	RURAL RANK	F	P
Application of operant behaviorism	38	2.6	97	3.3	9.93	0.003
Use of early childhood/ handicapped instructional materials	38	3.0	97	3.9	15.44	0.001
Behaviors of young children	38	3.0	97	3.8	11.96	0.03
Child-abuse identifiction and reporting procedures	38	2.[illegible]	97	3.6	6.53	0.007

References

Abt Associates. *Education as experimentation: A planned variation model* (Vol. III). Boston: Abt. Associates, 1976.

Antley, T.R. & Dubose, R.F. *A case for early intervention: Summary of program findings, longitudinal data and cost effectiveness.* Seattle, WA: Univ. of Washington, Outreach Program, 1981.

Ballard, J. & Zettel, J. Public Law 94-142 and Section 504: What they say about rights and protections. *Exceptional Children*, 1977, *44*, 177-185.

Edington, E. Personal communication, January 28, 1983.

Forbes, L. Some psychiatric problems related to mental retardation. *American Journal of Mental Deficiency*, 1958, *62*, *637-641*.

Fredricks, et al. *A data-based classroom for the moderately and severely handicapped* (2nd Ed.). Monmouth, OR: IDS, 1977.

Frohreich, L.E. Costing programs for exceptional children: Dimensions and indices. *Exceptional Children*, 1973, *39*, 517-524.

Haring, N.G. *Behavior of exceptional children* (2nd Ed.). Columbus Ohio: Merrill, 1978.

Hirshoren A. & Umansky, W. Certification for teachers of preschool handicapped children. *Exceptional Children*, 1977, *44*, 191-193.

Jordan, J.B., Hayden, A.H., Karnes, M.B., & Wood, M.M. *Early childhood education for exceptional children*. Reston, Virginia: CEC, 1977.

Karnes, M.B. Education of pre-school age handicapped children. In W.P. McLure, R.A. Burnhan, & R.A. Henderson (Eds.), *Special education: needs, costs, methods of financing. Report of a study*. Urbana, Illinois: University of Illinois, 1975.

Meier. J. *Screening and assessment of young children at developmental risk*. Washington, D.C.: PCMR, 1973.

Price, M. Personal communication, September, 23, 1981.

Roose, P. Trends and issues in special education for the mentally retarded. In S.A. Kirk and F.E. Lord (Eds.), *Exceptional children: Educational resources and perspectives*. Boston: Houghton Mifflin, 1974.

SAS user's guide. Cary, North Carolina: SAS Institute Inc., 1979.

Stile, S.W. & Stile, A. Special education and related services for handicapped young children (18-36 months): The project WISP center-based program. *Resources in Education, 1974, 14* (10), 88. (ERIC Document Reproduction Service No. ED 171 049).

Stile, S.W. & Atkinson, 1976. Packaged home instructional materials for parents of the severely handicapped: A concept analysis. *Resources in Education*, 1976, *11* (9), 91. (ERIC Document Reproduction Service No. ED 122 551).

Tawney, J.E., et al. *Programmed environments curriculum*. Columbus, Ohio: Charles Merrill, 1979.

SYSTEMS SIMPLIFY SERVICE

Gloria Galey
Lubbock I.S.D.
Lubbock, Texas

Program documentation is the most convincing measure of educational effectiveness. Unfortunately, it is a procedure that educators often shun or view as anti-productive. This reluctance of the public schools to get involved in research has been the undoing of many educational approaches and practices. Decisions to throw programs to the wind have often been made not because these programs don't work but rather because there is no recorded data proving that they do work. Special education has particularly ignored opportunity as well as responsibility to document effectiveness. The lack of proof has caused policy makers to question what was previously considered to be sound specialized programming, to decrease funding levels, and to diminish somewhat the national focus toward the needs of special children. With this realization, the project personnel of the Handicapped Children's Early Educational Programs (HCEEP) made documentation a top priority.

These early interventionists approached research with dedicated zeal. Their efforts have frequently resulted in positive action. For example, Texas legislators were convinced that funding services for young handicapped children was not only humane but cost effective. Evidence which weighted their decision in favor of this unique population included data documenting progress in children, involvement of parents, coordination among service providers, and cost efficient service delivery strategies.

Project DEBT (Developmental Education Birth through Two) of the Lubbock Independent School District has developed a comprehensive documentation approach. DEBT's overall data collection system is divided into several categorical subsystems. Each subsystem is geared to document information related to a specific program area. For example, one subsystem collects quarterly child progress data while another documents interactional patterns between parents and their children. Other priority categories are familial and medical histories, community awareness and involvement, and staff growth and development.

In an effort to reduce the tedious workload of time and commitment involved in recordkeeping, the DEBT Staff began to search for more expeditious procedures. The staff devoted unwavering allegiance to the development of streamlined prototype for collecting time and cost data. With the help of outside management consultants this has been accomplished. This major endeavor was made possible through DEBT's Outreach Program, a project funded through the H.C.E.E.P. of the U.S. Office of Education.

The newly designed system is comprehensive as well as multipurposed. It gathers information necessary to:

(1) improve management efficiency;

(2) identify program costs for each classification of special child;
(3) make teachers aware of their utilization of time;
(4) document a permanent record of time devoted to each child; and
(5) reduce the workload of the current reporting system.

More recently the staff has turned its attention toward the modification of an existing time and expense system package for the IBM Personal Computer. A feat of this magnitude has required patience and fortitude from a willing and resilient staff. It has been necessary to keep the original data system in tact while implementing the new one. Great care has been taken to prevent losing data during the transition period. In some program areas, i.e., travel, the staff has maintained overlapping reports. However, this double duty will soon be replaced by the simplified time saving system. The motto at the DEBT Office is that "a daily log will do it." This simply means that every member on the DEBT team (coordinators, teachers, consultants, aides, volunteers, etc.) keeps a coded log sheet each day of service performed, time spent, travel, and other pertinent information. Recording such information is not new to the staff; however, they are eager to have a system that requires less documentation time which will allow more time for direct services.

A significant strength of the system is its ability to account for volunteer participation. Volunteer hours are reported both in time and in monetary value. This is important from the standpoint of building strong public relations as well as reporting in-kind contributions for those programs requiring matching funds. Requiring volunteers to enter their services into the data system gives significance to their work and helps them to feel a part of the program.

Accuracy, honesty, and self-discipline are essential staff characteristics for maintaining a pure data bank. Staff must be trained to follow procedures exactly, be straightforward in their entries, and above all, be committed to a regular recording schedule. With such practices, data will be unquestionably reliable and will provide the documentation needed for future planning.

It is the intent of this presenter to encourage providers from health, social services, and education to implement viable accountability systems. Concentrated effort by all to follow this recommendation cannot help but improve the quality of services available to our nation's special children.

YOU GOTTA "CATCH FIRE" BEFORE YOU CAN "BURN OUT"
EXPLORATORY RESEARCH ON MOTIVATORS FOR TRAINING OF PARAPROFESSIONAL PRESCHOOL CLASSROOM PERSONNEL

James Strickland
Child, Inc.
Austin, Texas

Training for staff is often not as effective as administrators might have hoped, and it may not instill the "lust for learning" that is needed. From observing the classes and talking with instructors there seemed to be a key element missing --- Enthusiasm. This is not enthusiasm which was there when the job began and was lost. This is enthusiasm for the job and training which was just never there in the first place.

This is an important point because with all the talk about "burn out", we have failed to differentiate between those who "burned out" and those who had just never got "fired up".

Lack of enthusiasm is a common malady shared by all from shoe clerks to kings. It doesn't make them bad people, but it does make training more difficult.

After several training incidents the author began to investigate programs training paraprofessionals, their methods, processes, and results. Discussions with trainers and administrators of various types of social programs and data gathered within the local agency led to several informal observations.

(1) Formal training (training classes, etc.) are often viewed as passive activities which do not interest the trainee, and informal learning from experiences that do interest the trainee aren't recognized as learning. Do you see the paradox if formal training doesn't excite you and you don't see the connection between what does excite you and your work? Work related learning is doomed to a ho-hum experience.

(2) The perceived value of training varies directly with how useful or relevant we consider the information and that the more we know the more that we consider relevant. Conversely, the less we know the less we consider relevant. Also, where and how we live, our environment, and our experiences determine relevance for us.

(3) Finally, unless predisposed otherwise by our past and present environment, enthusiasm for formal training decreases as the threat increases. Often the value we associate with something we learn and, at the very least, how memorable and usable any learning experience is varies directly with the amount of risk involved in learning it.

"I can truthfully say that as a spelunker some of my unforgettable lessons have come while I was dangling on a rope, and I frequently remember and apply those feelings in deal-

> ing with seemingly unrelated situation. For example, the 'fear' of my rope breaking while hanging over a thousand foot pit is not a great deal different from the 'fear' of having my funding cut off, and the knowledge that I have survived one helps me deal with the other."

Perhaps, more to the point, many friends who have received their Ph.D.'s recall exactly what was said during their orals 10 years ago but can't remember what their spouses asked them to pick up at the Safeway this morning. Also, they tend to use facts they collected in preparation for their dissertations over and over again, applying them in many novel and useful ways. What we remember and how frequently we apply it must have some relation to how interested we were at the time of the learning experience; and risk, to a point, heightens the interest.

This discussion has deliberately focused on risk or threat for two reasons.

(1) Whether good or bad, it is such an intrinsic part of the educational system, and;

(2) The tests conducted and observations made indicated that paraprofessional classroom staff showed "risk avoidance", as above normal and as their most commonly shared job value.*[1]

Encouraged by their past success in academic endeavors, Ph.D. candidates are willing to "risk" going through their orals. In fact, the risk seemed to heighten their interest, retention, and usefulness of the whole experience.

But, many paraprofessionals do not share the history of academic success; and therefore, the risks involved while training are something to be avoided or minimized, not something that adds spice or interest to the training.

The test results were so dramatic and were so frequently confirmed by observations as to suggest that we have grossly, not just mildly, but grossly, overwhelmingly underestimated how much "fear of making a mistake" controls our actions; and that this fear is even more pronounced among many paraprofessionals.

Only after the observations began did the dimensions of the problem become apparent and enabled the author to understand how pervasive, overwhelming and debilitating it really is.

The fear of making a mistake must effect many more aspects of day to day life than we had ever previously expected. It seriously limits the number of new possibilities for exciting experiences that people allow themselves to encounter. Therefore, it severely limits the number of learning experiences.

---

* As measured by Hall Occupational Inventory.

1) Risk avoidance normally ranks high in all tested populations, but this study's statistics show paraprofessionals tested rank higher than the high norm.

> "In an attempt to introduce some excitement and interest into our training, we planned a river float trip; trips to nearby museums; and offered travel to conferences only to discover that no one would go on a river float trip because of fear of the water; several declined travel because of fear of flying or going to a strange city; and two of ten were not able to complete the museum tour because of fear of the stairs."

It appears that "fear" can be an "exciter", something that "heightens" the learning experience only if it is coupled with a prolonged history of success. When such history does not exist the same fear becomes uncontrollable and acts as a de-motivator.

To "do nothing" is safer than to "do something" and fail. Doing nothing or as near nothing as possible does minimize the risk of errors, but it also minimizes the opportunity for learning from mistakes. The completely successful "risk avoider" so minimizes the opportunity for true learning that there may be the possibility of "self-imposed environmental retardation".

There has been a great deal written and a great deal of discussion about "environmental retardation"; the usual example given to demonstrate it is the otherwise normal child who is misdiagnosed as retarded or slow, treated as such, and in time begins to act retarded. However, after rediagnosis and an appropriate change of environment, he begins to function at a nearly normal level. These were individuals that had the non-stimulating environment forced upon them by others.

There might be another category of "environmentally retarded", those who "circumstances" have forced into a non-stimulating environment and who have found it uncomfortable but relatively safe to remain there.

If such a sub-category of environmental retardation does exist (and at the moment it is only hypothetical), the circumstances which hold the individual could constitute a "black hole" for intellectual development, trapping the individuals and sapping off enthusiasm, intelligence, and finally even innate curiosity. The forces involved would be so debilitating that those trapped there would not value the opportunity to learn. We have come to call this the "will I get paid overtime for training" syndrome.

Testing for this study suggests the existence of such a "black hole", and even more discouraging, the data suggests that often the "smartest" paraprofessionals are the ones most likely to be trapped by it. As Table B indicates, those with the best abilities were also those who ranked highest on "risk avoidance".

If we are to believe John Holt's book How Children Fail, long before

TABLE A

Comparison of Risk to Other Work Related Values*

N = 79

	Risk	Avg. of all other values
Avg. Ranking	8.4	14.3
% Ranking Item Low	35.0	1.6
% Ranking Item High	11.4	64.1

TABLE B

Comparison of "Risk" Value to Basic Skill Level*

N = 25

	Average Basic Skill Level (%)
High Risk Takers (N=6)	4.1
Low Risk Rakers (N=25)	31.0
Overall Average (N=67)	21.1

---

*As measured by the Hall Occupational Inventory Adult Basic Form beginning to work, the educational system and the poverty culture which emphasizes punishment had taught them to avoid risk. Those with the best abilities learned that lesson the best.

> "As our tests and observations began to suggest the existence of the sub-category of environmentally retarded, I began to associate it with a study I had worked on many years ago.
>
> The study --- entitled T-Maze Shock Escape Successive Reversal of Learning --- was conducted with the normal T-maze with electrified grid flooring. The rat would be put in the base of the 'T'. Via a set of switches we would electrify one arm of the 'T' and then electrify the floor of the base where the rat was standing.
>
> The stimulus, or motivator, in this case was the very mild electric shock the rat was receiving. To avoid this negative stimulation, the rat would leave the base of the 'T' and eventually wind up in the arm of the 'T' which was not electrified. He would be taken out, and the process repeated until he had run to the non-electric arm ten consecutive times without first venturing into the electrified arm. Once he had achieved his ten successful 'runs', we reversed the switch and electrified the side which had previously been safe and made safe the side which had previously been electrified. (If this sounds confusing to you, you should have seen the poor rats.) We then counted how many times the poor confused creature ran to the wrong side before reversing his learning and did 'ten in a row' to the side which was now safe. This was done seven days a week for nine months. Isn't it amazing how cruel we can be in the name of science?
>
> But, I didn't feed them saccharine, and some of the results were interesting and perhaps applicable. During the experiment several of the rats began to NOT move from the base of the 'T'. This happened with such frequency that I notified my supervising professor and several times I called in the technician to see if the wiring had been broken. It was always the same. The wiring was fine; it was just that some of the rats, after having had the 'safe arm' switched back and forth for several days, were 'freezing' on the starting grid.
>
> Faced with the possibility of making an error, NO action seemed to be preferred to 'making a mistake', even if taking no action meant continuing to get shocked."

Further research, of course, would be necessary if this is a truly correct interpretation. But the similarity between the situations is none the less striking.

Fear, especially fear of making a mistake for which there is punishment, is such a strong de-motivator that it conditions many against taking any risks. Perhaps that is why some advocate a "no fail" policy for some adult education institutions. If that is their rationale, this may be overly simplistic for several reasons.

(1) While the "no fail" idea is loosely based on the theory of "operant conditioning", it overlooks one of the basic tenants of that theory. That tenant says that the conditioned response will continue long after the original stimulus is removed. The "fear of failure" spoken of by Glasser and others is so deeply conditioned and so frequently reinforced by other daily experiences that it would take much more than a few no-fail adult education classes to overcome it. Non-competitive grading with very strict time limits for learning is much more realistic. Passing a non-competitively graded course could provide self esteem which is transferable out of the classroom, but . . . removing all risk of failure is unrealistic, and those involved know it. Therefore, enhancement of self esteem for students who pass is not readily transferrable to the real world. Whether right or wrong, there is no value given to passing something that no one can fail. And, sooner or later, a student who has zero mechanical abilities and inclinations would be counselled away from a life-long ambition to be the lead mechanic on an Indy Pit Crew.

(2) The total "no fail" policy removes the risk for all students even those that might be able to use the risk (the challenge) as a motivator.

(3) And this is the most important point: simply removing the risk doesn't do anything to substitute an alternative motivator. It's a little like discovering that your car isn't running well and simply removing the engine. Unless you give some thought to an alternative power source, you are likely not to get very far.

In 1960 Charles Malone unknowingly explained why paraprofessional training and counselling programs are even more important than had ever been assumed. The job they have to do is much greater than expected. Malone concluded that persons who have a great "fear of failure" make unrealistic vocational choices. Combine Malone's conclusions with the preliminary findings of this study, and the enormity of the problem begins to take shape.

The problem was even more complex than had been assumed. To remember all the variables that are being tracked, the problem was reduced to quasi-mathematical terms.

We are interested in motivation --- "M". It had been determined that "M" could be equated to the trainees' guess of how valuable, "V", the training experience was going to be.

$$M \cong V$$

The hard part was trying to figure out what goes through the mind of the trainee when he or she is guessing about the value of the training.

Remember that the decision process of whether or not to be excited about training --- how much to value it --- is usually subconscious, very informal, and done by the trainee in the blink of an eye. Normally, we don't analyze whether or not we value something, whether or not we are going to be enthused and excited about it. We just are or we aren't . . . That's it.

In fact, the decision about whether or not we are going to be excited about something usually takes far less time to make than has been spent reading the last few sentences. The reader may have decided before beginning reading whether or not to be excited about what this paper had to say. That decision was probably reassessed within the first minute or two after beginning; and at this moment, that assessment may be reassessed. But, that entire process is so natural, so smooth, so subconscious that the reader may not have recognized it. Those teachers, aides, cooks, and parents who are trained also make the same decisions about the training programs designed by trainers; but the process was so subconscious that to ask why they were or were not enthused did not produce very useful results. It is important to know what will excite the trainees, cause them to remember and apply what had been presented.

Although almost every training session conducted was given "good" to "excellent" ratings by the trainees, they didn't seem too excited about what they were learning, retention of the information was not too good, and there did not seem to be much utilization of the information presented.

To determine what really excited them about learning, what caused them to remember and to use the information, the researchers had to get inside the trainees' heads, to make guesses about what's going on during that split second when they decided to "turn on" or to "turn off".

Here are five things that may happen in that decision:

ONE --- Flash! We quickly assess how relevant the information might be. Is there something to be learned here that I can use to help me with a problem I've got? Interest and enthusiasm about training jumped dramatically immediately after the first handicapped children began to hit the classroom.

TWO --- Zip! We determine the probability of successfully learning the information.

"Let's say I'm shipwrecked on a deserted island with Olivia Newton John who was injured in the wreck and is in need of brain surgery. Then one day the 'Complete Book of Brain Surgery' comes floating in. The information is obviously relevant, but my assessment of my ability to learn it isn't too great. Therefore, its value to me is limited."

THREE - Click! We decide what inducements or rewards, other than just helping solve an immediate problem might we get for learning the information.

"Let's say that I was able to master the skill of brain surgery and that Olivia survived. In addition to her singing for me, what other rewards might I expect? For example . . . Could I expect . . . Let's say . . . To receive a license to practice medicine . . . or in the case of our trainees, could they expect to receive a certificate, a raise, or a kind word of commendation and encouragement from the boss?"

FOUR -- Zap! We assess the amusement or entertainment value.

The information could be relevant, learnable, and the trainee could get rewards just for learning it. But, the learning environment could be so uninspiring as to turn her off. Or, conversely, she just might get inspired about learning some information which is useless to her because it is packaged right --- entertainment value.

FIVE -- Zing! We calculate the risk or threat involved in the situation.
"What's gonna happen if I try to learn this and fail? I gonna look dumb? Gonna getta 'F'? Who's gonna know?"
And remember, almost all current information suggested we will almost always overestimate this factor.

Those five things had makings of a quasi-mathematical formula. "V" can be equated with the sum of "Relevance" plus "Learnability" plus "Inducements" plus "Entertainment" minus "Threat".

$$V \cong R + L + I + E - T$$

This makes a fairly concise criteria for judging the value of a training program. But remember: relevance, learnability, reward, entertainment value, and threat are determined to a large extent by our environment.

However, threat wasn't the only variable on which tested paraprofessionals diverged from the norm. Seventy-seven percent of those tested showed above normal interest in being proud of their job. All the data remains to be calculated, but apparently there is a great deal of "status" or pride connected with just being called a "teacher" or "teacher's aide".

This won't come as a surprise to many, but rewards which confirm that pride and status are valued very highly by most paraprofessionals. Public recognition, certificates, and rewards are much more valuable than ever previously expected. They really do help maintain interest, enthusiasm. and excitement in training.

They are the "I" in the formula. But make sure they really mean something and are not just passed out indiscriminately. A trainer may wish for purposes of inducements to give everyone, or almost everyone, a certificate, but they do not have to be a certificate for the same thing. The value is increased if the trainer rewards the "best listener", the "best speaker", the one who tried the hardest, etc.

That deals with the "I", and now for the "E". Things such as the day care game to teach stress reduction are beginning to creep into the training repertoire, but there is a long way to go to add the "Pizzazz" needed for training to generate any real unbridled enthusiasm. Remember that it is necessary to overcome the highly overrated threat and underrated relevance. To do this, the researchers returned to the test data and observations which indicated the staff's high interest in television, particularly shows such as "Dallas" and "Dynasty".

Capitalizing on a chance to use such data, recently the researchers brought in a "bit" player from "Dallas" who also happens to be a public school teacher who is interested in self concept training. Interlaced with her stories of what J.R. was really like, she also worked on reducing the trainees' estimate of threat. It was a smash! Interest and enthusiasm were higher than at any other time thus far this year.

Relevance, the "R", is perhaps the most difficult element of the formula to maintain. Of course, trainers should make attempts at keeping all training relevant by asking the trainees what they want. But, remember, it was that method that produced the Edsel, and that method has produced more than one less-than-successful training program. The reason is that we don't always know what's relevant. However, it does appear that the more someone knows the more they consider relevant. Hence, Einstein considered everything relevant and related and reduced it all to a simple $E = MC^2$.

Now his formula is definitely relevant to what's going on in preschool classrooms. Mass is converted into energy each time the light is switched on or a child speaks, but not many care unless the light fails to come on or the child fails to speak. And even then, most people would consider a person crazy if he tried to explain the problem in terms of Einstein's formula. It just does not seem "relevant". When one doesn't understand or recognize a potential problem (i.e., as long as the lights are on), the solution doesn't seem relevant. That's the mistake being made in much of our training. Trainers were offering solutions to problems that had not been noticed. And, often even if the problems are noticed, the trainees saw the solutions as about as understandable as $E = MC^2$.

There is something else that gets in the way of seeing relevance. It's the pride mentioned earlier. To admit that there is a problem, that we need help, as Table D suggests, the greater the fear of failure, the greater the likelihood of self delusion. Therefore, there are two kinds of relevance, "Real Relevance" and "Admitted Relevance". Pity the poor trainee who does not understand the difference.

Often the trainer's most important task of motivation will occur weeks or months before the actual training in helping the trainee match up "admitted relevance" to "real relevance".

> "I now know that computer literacy might not currently be considered relevant by my classroom staff; and if

TABLE C
Comparison of "Pride in Job" to Other Job Related Values**

	Pride in Job	Avg. of other Values (Excluding Risk)
Average Ranking =	15.3	14.3
Percent Ranking Item Low =	0	1.6
Percent Ranking Item High =	77.2	64.1

TABLE D
Comparison of Paraprofessionals Assessment of Their Training Needs to Instructor's Assessment and Objective Measures

Need for Further Training	Subjective Measures		Objective Measures	
	Trainees Self Assessment	Trainer's Assessment	Need as Assessed by Test for:	
			Practical Knowledge	General Abilities
High	1%	34%	46%	99%
Medium	25%	66%	27%	1%
Low	74%	0%	27%	0%
	N = 19	N = 19	N = 11	N = 11

N varies because of attrition which occured between measurements

---

** As measured by Test of Practical Knowledge designed by Wiedeholt and Larsen -- Services for Professional Educators

> I really thought it was important that the teachers and aides become computer literate, I should probably prepare them in some way by subtly, over a period of months, pointing out how the computer might help them with lesson plans, enrollment records, and tracking a child's development. Once they began to see how a computer might help solve immediate problems, the training would be more relevant and, therefore, more valuable. Without such preparation, I might not expect much excitement, less will be remembered, and information will probably not be used."

Relevance seems to be closely related to the trainee's assessment of his or her abilities to successfully learn. As with the example of brain surgery on the deserted island, there is obviously not a 1-to-1 correlation; but to a point the more a person needs to learn something the greater his willingness to try and the greater his assessment that he will eventually succeed; unless something in the environment has taught him that he can't learn, that he is dumb, that it is too hard. (Atkinson 1974).

Unfortunately, the latter is the case with many paraprofessionals. They are predisposed to underestimate their ability to learn, and (because it's threatening to admit that we don't know something) to overestimate what they already know. That, combined with their underestimating the relevance of the training material and overestimating the other risks, leads to the "Helen Keller" comparison.

Obviously, Mrs. Keller could learn, but she did not know she could learn. She knew she had problems but denied them and did not understand how what the teacher was showing her was relevant. She was obviously scared, prone to overestimate the threat of the risks she would have to take if she was to learn.

> "When my teacher began my education, she knew my limitations and narrowed the range of studies which might be useful to me. She carefully noted the things I could do with some hope of success . . . The simplest thing we learn to do well . . . make life infinitely worth while and is a true education."

CONCLUSIONS

Before training starts:

- Determine whether you are rekindling the flames of some previous interest or trying to start a new fire.
- Obtain some estimate of the trainee's "fear of failure", tendency to avoid risk.
- Obtain an objective assessment of the trainee's knowledge of the material to be covered.
- Obtain the trainee's estimate of his or her own knowledge of the material to be covered.
- Obtain an objective assessment of the relevance of the information to be covered.
- Obtain the trainee's assessment of the relevance of the information to be covered.
- Obtain an objective assessment of the basic skill levels of the trainees (reading, writing, and math).
- Compare all of the above assessments and estimates and delay or modify training accordingly.

Once training begins:

- Clearly define what is to be learned and why.
- Individualize training in accordance with information collected before training began.
- Where possible keep information in the practical as opposed to the abstract. Use plenty of examples, demonstrations, and illustrations of how the information fits the need of the trainee.
- Provide rewards and inducements as needed and in accordance with a planned reinforcement schedule.
- Don't be afraid to be overly dramatic, or novel, or to try new things.
- Make the information easy to learn and frequently point out to each trainee how much he or she has learned.

Once training is completed:

- Establish a follow-up system to re-emphasize the relevance by pointing out how the new information has helped solve an old problem. Compliment trainee on utilization of information.
- Determine what additional training or retraining is needed.

THE RISE AND FALL AND RISE AGAIN OF THE TYPICAL HEAD START EMPLOYEE

AUTHOR'S NOTE:

In compiling and analyzing the data in the research project, from the entry period through the success period, we recognized a growth pattern. From this pattern, we borrowed a model from Floyd and Jacqueline Dickens that can be used as a general guide to the movements of the employee. We are not as convinced as the original authors of the absolute truth of the developmental learning model, but it does help in giving us a way of thinking about what the employee might be going through. These movements represent the learning process exhibited by the employee as they pass through the four phases of development: Entry Phase, Adjusting Phase, Planned Growth Phase, and Success Phase. It is very important to note that an employee might get stuck in one phase or regress to an earlier phase.

At the start of any new job, the employee enters the Entry Phase of the developmental model. This phase is characterized by:

I. Entry Phase.
   - Feeling of too little or no direction from the boss.
   - A feeling of "I've got it made" (because of securing the desirable job position).
   - A great deal of talk (or boasting) with friends and family about the job, especially their new title and what this may lead to.
   - Contained anger; interpersonal and job discomfort is ignored and not dealt with.
   - Reserved behavior, "Don't make waves".
   - Regular attendance.

II. Adjusting Phase. This phase is divided into two parts, a dissatisfaction stage and a frustration stage. The dissatisfaction stage is characterized by:
   - A negative reaction (especially regarding interactions with superiors who seem to just want to mete out punishment).
   - Rage that slips out periodically; begin to display anger.
   - Low self-confidence.
   - Beginning to focus on inequalities of the job but still hold anger inside most of the time; may complain a lot.
   - Negative reaction at seeing others promoted to better jobs and see it as favoritism rather than recognizing proof of their chance at a career later.

   The frustration stage is characterized by:
   - Rage that cannot be contained or managed (may be seen as bad attitude).
   - A lot of verbal, interpersonal fights (may be seen as militant or noncooperative).
   - No movement in personal growth or job growth and production. (The degree of anger inhibits growth.)
   - A general denial for the need to improve. (See Table D)
   - No increased job results. (Dysfunctional behavior can help produce job stagnation.) This is the stage that many get stuck in.
   - Becoming more vocal, tending to speak out about feelings. But, usually inappropriately.

III. Planned Growth Phase. However, it may be that at some point the employee makes it through all the above and will come to a crossroad in their development. It may be precipitated by a number of things. They may become weary and see their behavior becoming debilitating in the area of job growth. They may become fearful of losing their jobs or may realize they are getting less job responsibility and are being shoved into a phase of planned growth. During this time, there is a conscious and concentrated effort to grow in their jobs and in personal development. The Planned Growth Phase is characterized by:
- Management of rage; controls indiscriminate outbursts; chooses things at which to become angry.
- Style changes; behavior becomes smoother; tends to initiate fights less and less often.
- A start to move toward goals; career plan is established.
- Establishment of firm goals; begins to see what to reach for.
- Rough periods; may slip back to the frustration and dissatisfaction stages.

IV. As the Success Phase is reached:
- Basic goals are met; progress can be seen.
- New and harder goals are set.
- High confidence is developed (as a result of successes).
- High-quality results are produced. There is an awareness of how the system works and acquired skill in using it.
- Strokes become less important. (No longer dependent on verbal OK's and praise from others.)
- Results become more important. (Jobs well done speak for themselves.)
- A success affect is developed; self-confidence and importance are displayed.
- Seeks additional training.
- More open to additional responsibilities. (sees these not as "more work dumped on me" but as natural consequences of acquired competence).

The research of Floyd and Jacqueline Dickens shows that these phases are never skipped, nor do they occur out of sequence. The time spent in each phase varies, however, because of individual differences. Different levels of awareness of self and the environment can reduce the time spent in each phase. A person may also become stuck in one phase and even regress to an earlier phase. This regression can take place even from the Success Phase, since nothing remains static. Getting too comfortable, "burning out", and failing to realize that growth must continue explain regression.

THINGS TO REMEMBER WHEN TRAINING PARAPROFESSIONAL STAFF*

-- The trainee may not value learning for its own sake because of his or her home environment while growing up. He or she may not have had a strong educational tradition.

-- The trainee may have an anti-intellectual approach spawned by his or her school experiences. These experiences may spill over into how he or she approaches your training even if you try to make your approach very NON-school-like. The trainee may have such deeply engrained attitudes about learning that it effects your training.
-- The trainee may have limited language and reading skills.
-- The trainee may have limited academic learning skills, how to listen and respond in class; but non-academic learning skills may be very well developed. This may lead you to believe that the trainee is just not trying in class.
-- The trainee may have a preference for the physical rather than the abstract.
-- The trainee may have a preference for physical rather than verbal learning because of this and the physical.
-- The trainee's learning rate may seem slow. Often this is because the information is presented in the abstract and left to the trainee to translate to the physical.
-- The trainee may have a poor self concept which is easily recognizable or masked by a tendency to be critical or cynical about others, however . . .
-- The trainee may grossly underestimate his need for training.
-- The trainee may overestimate the difficulty of the information to be learned.

*As adapted from "Factors Typical of the Disadvantaged"
by Frank Riessman in his book The Culturally Deprived Child.

Bibliography

Atkinson, John W. and Father (Editor), The Theory of Achievement Motivation, John Wiley and Sons, New York, 1966.

Atkinson and Raynor (Editor), Motivation and Achievement, V.H. Winston and Sons, Washington, D.C., 1974.

Biehler, Robert, Psychology Applied to Teaching, Houghton Miffin Co., Atlanta, 1974.

Chernow, Fred B. and Chernow, Carol, Classroom Portfolio of Energizers, Puzzles, Quizzes, Games and Brain Teasers, Parker Publishing Co., Inc., West Nyack, New York, 1979.

Dickens, Floyd, Jr. and Dickens, Jacqueline, The Black Manager, Amacom, New York, 1982.

Dunn, Kenneth and Dunn, Rita, Situational Leadership for Principals, Prentice Hall, Englewood Cliffs, New Jersey, 1983.

Dunn, Kenneth and Dunn, Rita, Teaching Students Through Their Individual Learning Styles: A Practicum, Prentice Hall, Englewood Cliffs, New Jersey, April 1978.

Galloway, Charles, Psychology for Learning and Teaching, McGraw Hill, New York, 1976.

Goldstein, William and DeVita, Joseph C., Successful School Communication, Parker Publishing Co., West Nyack, New York, 1977.

Harlow, Harry F., Mice, monkeys, men, and motives. Psychology Review, Vol. 1, 1953, p. 60.

Holt, John, How Children Fail, Revised Edition, Delacorte Press, New York, 1982.

Inbar, Michael and Stoll, Clance, Stimulation and Gaming, The Free Press, New York, 1972.

Karabenick, Stuart and Youssef, Performance as a function of achievement motive level and perceived difficulty. Journal of Personality and Social Psychology, 1968, Vo. 10, pp. 414-419.

Keller, Helen, The Open Door, Doubleday and Company, New York, 1957.

Kozol, Jonathan, Death at an Early Age, Houghton Miffin Co., Boston, 1967.

McClelland, David C., Toward a theory of motive acquisition. American Psychologist, Vo. 20.

McClelland, David C. and Harris, George, To know why men do what they do. Psychology Today.

Postman, Neil and Weingartner, Teaching as a Subversive Activity, Delacorte Press, New York, 1969.

Rebore, Ronald W., Personnel Administrator in Education, Prentice Hall, Englewood Cliffs, New Jersey, 1982.

Taba and Elkins, Teaching Strategies for the Culturally Disadvantaged, Rand McNally Co., Chicago, 1966.

SHORT-TERM TRAINING AND ITS EFFECT ON MANAGEMENT STYLE IN HUMAN SERVICE

Stuart W. Reynolds
Texas Tech University
Lubbock, Texas

INTRODUCTION

Rationale

In the eighties, "the new age of accountability," the public expects quality-managed federal programs at minimal cost to the taxpayer. Baratz and Moskowitz (1978), reported that this sentiment was responsible for a tax revolution throughout the nation with California's Proposition 13 serving as a focal point and a catalyst.

For federally sponsored human service organizations the message is clear; they must be attentive to new value systems which are emerging due to our fast-changing social, political, and economic systems. It is evident that while social problems are increasing, available dollars and manpower will probably remain constant or decrease (Steiner, 1977; Benton, 1978). For example, Commissioner Clarance E. Hodges of the Administration for Children, Youth and Families recently outlined the future objectives for Project Head Start, a federally funded preschool program for disadvantaged children and their families (Hodges, 1982). Some pertinent goals included (1) maintaining and, if possible, increasing Head Start enrollment, (2) improving program quality and (3) improving administration and management while maintaining the current budget allocation of $911.7 million. Therefore, human service organizations will need to shift from a management philosophy based on intuition to more empirically-tested approaches which emphasize cost-effective outcomes (Benton, 1978).

To achieve the goal of increased production, on-the-job management training will likely play a continuing role in the process of technology transfer. Technology transfer, a new term to the field of business, is defined as "seminars, workshops, demonstrations, and other related methods, processes, and activities whereby pure and applied research knowledge is transferred operationally into useful processes, products, or programs that fulfill actual or potential public or private needs" (Banki, 1981). Given the amount of training in government, technology transfer costs millions of dollars each year. If fewer dollars will be available for technology transfer in governmental human service organizations, then it seems prudent to devise field-tested methods that will increase training efficiency at a low cost.

What appears to be needed in human service organizations is management training that addresses many of the current issues in these changing times. Such training should consist of the following: (1) explore the issue of productivity and discuss ways that maximum results can be obtained, (2) be based on an empirically tested approach, and (3) be cost effective in its implementation. The purpose of this study was to design a low cost management training workshop and test its effectiveness on promoting cognitive change in human service providers. The study evaluated a management training model based on Organizational Development concepts.

Literature Review

This section reviews the empirical research related to Organizational Development (OD) theory and more specifically the Managerial Grid concept. OD is an educational strategy that is designed to produce organizational change or modification (Goldstein, 1974). It purports to use the findings from the behavioral and social sciences to create and maintain necessary changes in policy, program, structure, values, attitudes, and/or behavior patterns. Its purpose is to "increase total organizational or system effectiveness and future growth as a response to constant technological, economic, and social change in our society" (Banki, 1981, p. 87). OD aims at working toward humanistic and democratic leadership in its management philosophy, methods, and practices. Special emphasis is given to open problem-confronting and participative management-employee relations. By using these methods, individual achievement, growth, advancement, and welfare are optimized while simultaneously maintaining the goals of the organization (Banki, 1981).

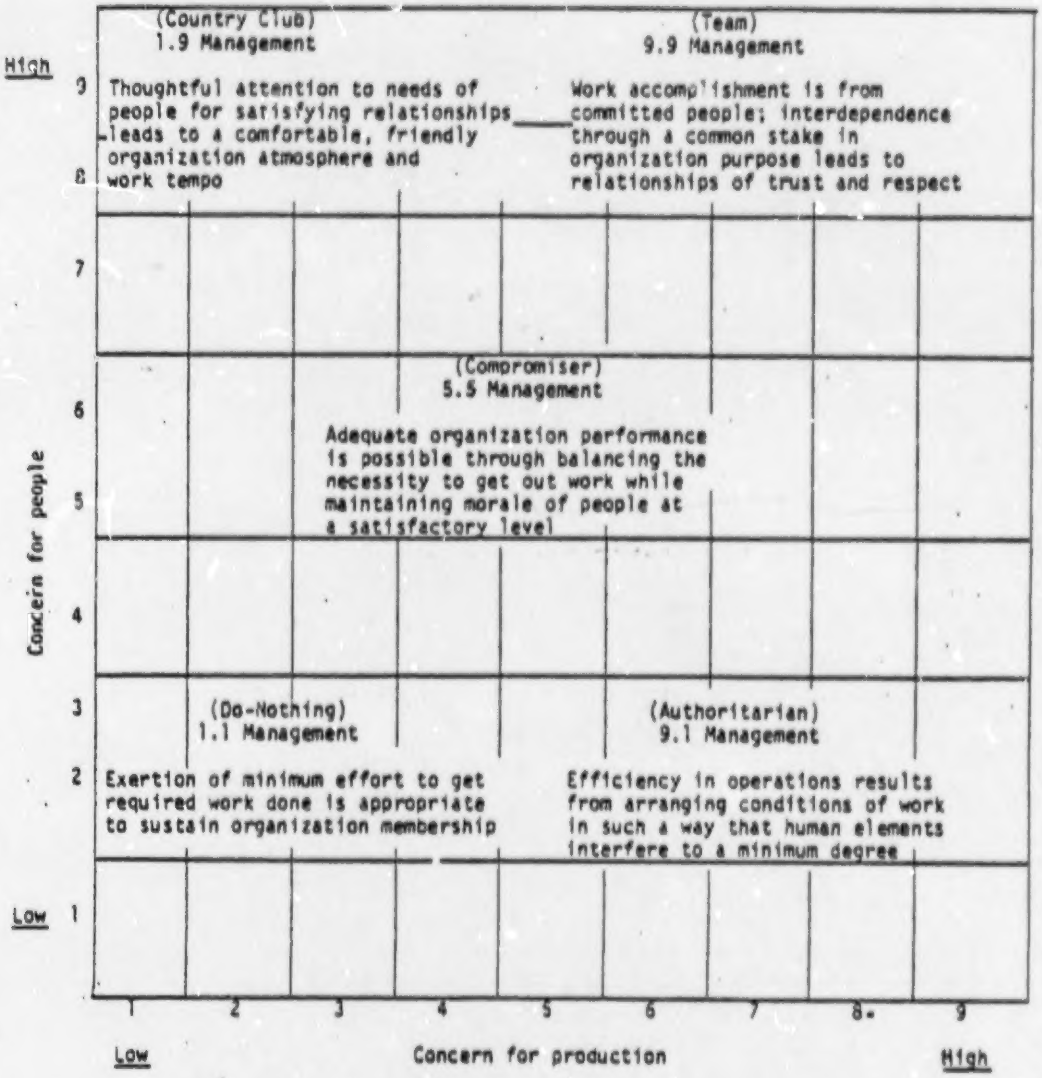
There is a growing body of research indicating rather clear differences between the behavior of high-and-low production workers, depending upon the supervisor relationship (Splotts, 1964). These studies suggest that high-production supervisors tend to supervise their subordinates less closely, spend more time consulting with their workers, and give them more opportunities to participate in the decisions that affect them than do low-production supervisors. The quality of the leader-subordinate relationship via genuine respect and consideration that the leader shows for the follower's need appeared to be a critical variable. In other words, the employee-centered leadership tends to be more closely associated with high productivity, morale, and job satisfaction than does production-centered leadership. Thus, employee satisfaction and high production can be obtained simultaneously.

Therefore, training programs in management development may need to focus on employee participation, which apparently facilitates production of services. To emphasize the necessity for these dual concerns, Likert (1967, 1961), an authority in management research, concluded that a participative management style makes significantly better use of human resources and enhances organization effectiveness. Likewise, Cangemi (1975), stated that management style is affected by organizational structure as well as personal variables and the flat or participatory structures promote more harmony than traditional, heirarchial, vertical structures. The implications are that in order to achieve increased productivity, administrators must not only be concerned with establishing and tracking management objectives but also with facilitating decision making processes with employee participation and support. Thus, if research on job satisfaction and morale affects management behavior (Likert, 1967, 1961; Cangemi, 1975), then future studies of management behavior should consider these as important variables that can affect productivity. This rationale appears to have wide range implications for all types of managers.

It is a federally sponsored program and during its 16 years of operation, Project Head Start has improved the readiness of an estimated 5.5 million disadvantaged children for school (DHEW Pub. No. OHD 76-30192). Central to the successful operation of Project Head Start are the supportive staff such as coordinators, teachers, directors and aides of the Head Start program. Head Start directors are a population available for study in order to increase our understanding of managerial styles. Head Start measures its production in terms of human services; therefore, regard for people and production become two major concerns.

An Organizational Development model that analyzes these two concerns is the Managerial Grid Theory (Balke & Mouton, 1978). Taylor and Lippit (1975), describe the managerial grid as a tool which identifies theories of managerial behavior based on two key variables occurring in organizations: a concern for production and/or people. The grid helps identify how particular degrees of each of these variables join together to form identifiable managerial orientations. These two variables and some of their possible combinations are shown in Figure 1. The horizontal axis indicates concern for production, and the vertical axis indicates concern for people. Each is expressed on a scale from 1, which represents minimal concern, to 9, which represents maximum concern.

The 1/1 style is located in the lower left corner of the Grid diagram. This represents minimal concern for production and minimal concern for people, or the "do-nothing" manager. This type of manager sees employees as not liking to work, and hesitant to assume responsibility. Therefore, a conflict exists between people and production and he/she feels the best option is to withdraw from employees and isolate oneself from organizational issues. The 1/9 style in the upper left corner depicts maximum concern for people but minimal concern for production, or the "country club" manager. Managers using this style view employees as requiring shelter and protection which he/she feels they are not capable of providing for themselves. Based on a high need for acceptance, they avoid negative comments or conflict situations. The 9/1 style in the lower right corner portrays maximum concern for production, and minimal concern for human relationships, or the "authoritarian" manager. This type of manager assumes that people do not like to work and that strong authority must be exerted to achieve satisfactory production. The 9/9 style in the upper right corner represents maximum concern for both human relationships and production, or the "team-oriented" manager. This manager sees people as basically productive and creative. He/she attempts to maximize employees involvement in the planning and doing of meaningful work



(Country Club)
1.9 Management

Thoughtful attention to needs of people for satisfying relationships leads to a comfortable, friendly organization atmosphere and work tempo

(Team)
9.9 Management

Work accomplishment is from committed people; interdependence through a common stake in organization purpose leads to relationships of trust and respect

(Compromiser)
5.5 Management

Adequate organization performance is possible through balancing the necessity to get out work while maintaining morale of people at a satisfactory level

(Do-Nothing)
1.1 Management

Exertion of minimum effort to get required work done is appropriate to sustain organization membership

(Authoritarian)
9.1 Management

Efficiency in operations results from arranging conditions of work in such a way that human elements interfere to a minimum degree

Figure 1. The Managerial Grid Diagram

BEST COPY AVAILABLE

since this is viewed as promoting productivity and job satisfaction. And finally, the 5/5 style in the center is "middle of the road" in both areas of concern, or the "compromising" manager. This type of manager assumes that people can only be moderately productive and have moderate job satisfaction. Therefore, a flexible or compromise approach is used in dealing with conflicting employee needs and organizational needs.

A Ranking of Managerial Styles

To gain a better understanding of this study, it is important to know the desirability of each management style. Blake and Mouton (1978) state that the team management style is optimum to organizational development. They see the remaining styles as having major disadvantages, which can be ranked in order of desirability. The compromising style (5/5) is ranked as the second most desirable because there is at least marginal concern for production and people, although real innovation and creativity within an organization are unlikely at this level. Authoritarian management (9/1) ranks third since there is a strong concern for production (goods or services) which is critical for an organization's survival. The counterpart to this style, country-club management (1/9), ranks fourth because there is an exaggerated concern for people. This can be seen as satisfying many psychological aspects of human needs producing high morale, but low production creates a failing. Finally, the do-nothing style (1/1) is seen as the least desirable because there is an absence of concern for either production or people.

METHODS

Subjects

The population included all Head Start directors in a southwestern state within the Department of Health and Human Service Region VI. A total of 87 directors initially participated, but due to lack of cooperation or errors in completing the required forms, 21 of the subjects were dropped from the analysis. Inspection of the data revealed no particular patterns of the subject population that contributed to the errors (i.e., age, sex, education, etc.). Therefore, the sample used in this study consisted of 66 subjects. There were 37 females and 29 males with a mean age of 42. Racial diversity consisted of 43% Anglo, 34% Mexican-American, 19% Black, and 4% Asian-American. The educational level of the Directors ranged from high school diploma to a doctorate with a mean of four years of college plus some additional college hours. Directors' self report measures of training in management related areas averaged 101 hours of classroom time. Program components showed a mean of 197 children enrolled per Head Start program with the average director responsible for supervising an average of 24 staff members.

Table 1

ANALYSIS OF COVARIANCE SUMMARY TABLE
FOR MANAGEMENT GRID SCALES

Scale	Source	df	MS	F-value	p-value
Team	Group	1	722.93	12.39	.0001
	Error	129	58.37		
Compromiser	Group	1	15.30	0.43	NS
	Error	129	35.53		
Country-Club	Group	1	0.12	0.00	Ns
	Error	129	29.82		
Do-Nothing	Group	1	144.98	4.23	.04
	Error	129	34.26		

Analysis of covariance indicated there was a significant program effect on the team management scale F (1, 129) = 12.39, $p < .001$ and do-nothing scale, F (1, 129) = 4.23, $p < .05$. The mean on the team management scale was significantly higher for the experimental group, and significantly lower on the do-nothing scale. There were no significant differences due to program effects on the compromiser scale, F, (1, 129) = 0.43, $p < .05$ or on the country-club scale, F (1, 129) = 0.0, $p < .05$.

To partially determine if the analysis of covariance was an appropriate measure, a test for homogeneity of regression coefficients was performed to show possible sources of statistical invalidity between the experimental and control groups (see Table 1). All but one management scale met the assumption of homogeneity of regression coefficients. The data did not meet the assumption of homogeneity of regression coefficients for utilizing analysis of covariance to assess program effects on the authoritarian scale. Therefore, a posttest t-test was utilized to determine program effects for this scale. Posttest t-test analysis indicated there was no significant differences between the experimental and control group on the authoritarian scale, ($t = .74$, $df = 64$, $p < .05$).

DISCUSSION

The major goal of the study was to assess the effects of a short-term management training program on Head Start directors in a southwestern state. During training, the managerial grid concepts and more specifically, the team management style, were emphasized (Blake & Mouton, 1975). It was hypothesized and supported empirically, that the experimental group related to the control group, would show a significant increase in a cognition toward the team management style.

Summary and Conclusion

Results of the present study demonstrated substantial changes in managerial styles in an applied setting with human service providers. The primary purpose was to determine the effectiveness of a short-term training program in bringing about a cognitive change toward the team management style for Head Start Directors.

Previous research has shown that the most desirable management style is one in which concern for people and production are maximized. Results from the present study indicate that a significant increase was demonstrated following completion of the training program. In contrast, the management style that minimized the concern for people and production significantly decreased. Lastly, an improved experimental design provided data which supports the use of Organizational Development theory and the managerial grid concepts as useful tools in training human service providers.

References

Babbie, E.R. The practice of social research. Belmont, California: Wadsworth Publishing Co., 1979.

Banki, I.S. Directory of administration and management. Los Angeles, California: Systems Research Institute, 1981.

Baratz, J.C., & Moskowitz, J.H. Proposition 13: How and why it happened. Phi Delta Kappan, 1978, 9, 9-11.

Benton, L. Management for the future. New York: McGraw-Hill, 1978.

Blake, R.R., & Mouton, J.S. The new managerial grid. Houston: Gulf Publishing Co., 1978.

Blake, R.R., Mouton, J.S., Barnes, L.B., & Greiner, L.E. Breakthrough in organizational development. Harvard Business Review, 1964, 42, 133-155.

Campbell, J.P., Dunnette, M.D., Lawler, E.E., III, & Weick, K.E., Jr. Managerial behavior, performance, and effectiveness. New York: McGraw-Hill, 1970.

Cangemi, J.P. Leadership characteristics of business executives appropriate for leaders in higher education. Education, 1975, 95, 299-32.

DHEW Publication No. (OHD) 76-31092 Washington, D.C.: U.S. Government Printing Office, 1976.

Goldstein, IL.L Training program development and evaluation. Belmont, California: Wadsworth Publishing Company Inc., 1974.

Hall, J., Harvey, J.B., & Williams, M. Styles of management inventory. Woodlands, Texas: Teleometrics International, 1973.

Hodges, C.E. Decisions on Future Directions for Head Start. Memorandum Office of Human Development Services, Administration for Children, Youth, and Families, June 1982, Washington, D.C.

Kirk, R.E. Experimental design: Procedures for behavioral sciences. Belmont, California: Brooks Cole Publications, 1968.

Likert, R. New patterns of management. New York: McGraw-Hill, 1961.

________. The human organization: Its management value. New York: McGraw-Hill, 1967.

Robinson, P.W. Fundamentals of experimental psychology. Englewood Cliffs, New Jersey: Prentice-Hall, 1981.

Splotts, J.B. The problem of leadership: A look at some recent findings of behavioral science research. Kansas Business Review, School of Business, University of Kansas, June 1964, 17 (6), 3-13.

Steiner, R. Managing the human service organization. Beverly Hills, California: Sage Publications, Inc., 1977.

Taylor, B., & Lippitt, G. (Eds.). Management development and training handbook. Managerial grid in practice. New York: McGraw-Hill,1975.

Teleometrics International. How to interpret your scores from the styles of management inventory. Woodlands, Texas: Teleometrics International, 1973.

STAFF UTILIZATION AND SUPPORT SYSTEM: A LOW-COST ALTERNATIVE

Rick van den Pol
University of Montana
Missoula, Montana

The effective delivery of early childhood special education (ECSE) is a challenging enterprise, particularly in rural/remote areas. Lack of a legal mandate, program costs, parent awareness and participation, and untrained staff all contribute to barriers (Hutinger, Kutcher, Smith-Dickson, Hanner, 1981). In the fall of 1980, the Big Sky Early Education Center (BSEEC) received a three-year grant from the U.S. Department of Education, Handicapped Children's Early Education Program, to research these service barriers and to develop a replicable model that is responsive to the difficulties of rural ECSE. One component of the resulting Big Sky Model is called "Integrated Parent and Staff Training." As the name implies, this set of practices arranges common skill development events and materials for both parents and agency staff. Further, skill building opportunities are integrated into ongoing service delivery (i.e., on-the-job training). Thus, this component is responsive to needs for parent awareness and participation and staff training. Additionally, program costs are minimized by integrating parents into a center-based service delivery role, and by ensuring that important intervention techniques introduced via relatively costly workshop, inservice, book or manual formats are correctly applied to young handicapped children.

Context: The Big Sky Early Education Model

The Big Sky Model consists of three procedural components which are viewed as "essential" for child progress, and two "complementary" components which can greatly enhance rural program effectiveness. The three essential components are: Individualized Child Assessment and Program Planning, Classroom and Home-Based Instruction, and Progress Evaluation. One of the two complementary components is "Interagency Collaboration." The present paper focuses on empirical research findings which have contributed to the latter complementary component: "Integrated Parent and Staff Training." Naturally, the involvement of parents is crucial at the outset of ECSE program installation. However, it is recommended that replication of the Integrated Parent and Staff Training component not be attempted until prerequisite child-focused program features are operative.

Considerations in Adult Utilization and Support

Once a system for individual child assessment, program implementation, and progress evaluation had been implemented, Big Sky staff began to systematically research methods for preparing parents and staff to deliver special educational interventions. A guiding consideration was one of generality, or replicability. That is, techniques for intervening with youngsters and their care providers needed to be effective across a variety of developmental domains, and additionally, had to have potential for training a provider to deliver a range of specialized care techniques. Further, fiscal constraints affecting Montana's 550 LEAs argued for the development of products and procedures that were adequately flexible to be able to supplement and support a variety of existing curricula (thus obviating the re-invention of a "new" curriculum), that could be installed and maintained without costly external technical assistance, that could be adapted to the individual needs of a child or site, and that would be understood by individuals who had abbreviated educational backgrounds. Stated simply, educational strategies that are not clearly related to both child progress and local circumstances have limited potential for success. Conversely, models which focus on measurable child progress and the utilization of existing resources, have a much greater likelihood of adoption and local continuation.

In examining resources common to early childhood programs in Montana, it was apparent that facilities, curricula and materials, staff preparation and staffing patterns, activity schedules, degrees of parental involvement, and operating budgets varied enormously (e.g., LEA vs. Head Start vs. day care center). Resources that were available to potential Big Sky replication sites included center-based program time, an "extended staff" (employees, volunteers and parents), and commitment to early childhood education. In consideration of the needs and capabilities of rural sites, the Big Sky Model developed a system for training staff and parents in a combined manner, and for utilizing these newly trained individuals in the delivery of programs. Utilization of newly trained staff ensures that "fragile" teaching skills are correctly applied, and increases the total number of available educational opportunities for children. Joint training of parents and staff provides all participants with common abilities and vocabularies, and "breaks the ice" that can so often chill,or even freeze, parent/staff exchanges.

Peer recognition and support may be one important variable in the prevention of "burn-out". Joint parent/staff training essentially doubles the number of available "peers" in small communities. And, as Strickland (1983) has noted, "You gotta catch fire before you can burn out." Integrated parent and staff training provides a variety of opportunities for supportive parent/parent, parent/staff, and staff/staff exchanges. For inexperienced staff or parents who have never fully appreciated formal educational opportunities, these training events represent such an opportunity to "catch fire."

The Staff Utilization and Support System

The system is simply an organized approach to ensuring that the "available hands" in the classroom are appropriately prepared and working well with the children. Essentially, the system provides role-played and competency-based inservices. Then, through scheduled observations of the use of instructional skills and related measures of student progress, the teacher is equipped with information that is helpful in managing the overall educational program.

Formal Instructional Program: Training and Feedback. Because rural ECSE classrooms can be expected to have a "non-categorical" enrollment (i.e., potentially all handicapping conditions will be represented), child training techniques would need to have "generality"; that is, would be able to accommodate the needs of multiple and severely through non-handicapped learners. Effective teaching strategies identified for difficult learners include emphasis on the use of clear cues, guided success, timely positive attention, and keeping records of student progress (e.g., LeBlanc & Ruggles, 1982). To ensure the "functionality" of targeted skills, the Big Sky staff use these elements throughout the school day and parents are encouraged to do so at home. Those programs involve a "least restrictive" teaching procedure including:

1) Gain student's attention
2) Use student's name
3) Give cue consistently
4) If needed, use gestural prompt
5) If needed, use physical prompt
6) Reduce prompt intensity, if prompt used
7) Reward immediately
8) Praise enthusiastically
9) Praise descriptively
10) Record data (each trial)

This procedure satisfies the criterion of generality in several ways. First, newly enrolled handicapped children may have very few (if any) instruction following skills. Use of a positive, least restrictive instructional sequence (i.e., "tell 'em, show 'em, help 'em, praise 'em") provides children with several opportunities to correctly follow an instruction, while incorrect or non-responding results in increasing "hints". Second, use of physical assistance ensures that naive children do successfully follow required instruction, and over time, do so with increasing independence. Third, for conduct disordered children, consistent application of gentle assistance prevents oppositional patterns and/or "learned helplessness." These techniques are important components of tantrum management techniques. Finally, the consistent use of enthusiastic, descriptive praise (irrespective of the kind of prompt provided) encourages delayed learners' self-perceptions of successfulness.

To measure the effects of specific training and feedback procedures on the accurate use of Formal Instructional Programs, an experimental design was applied to that aspect of classroom operation.

Setting and Subjects. All training and feedback activities reported here were completed in the Big Sky model classroom. Eight classroom volunteers and staff were involved as subjects in the research.

Training in Formal Instructional Program procedures. All persons included in this research were taught to use a sample Formal Instructional Program (FIP) by experiencing discussion and role-playing activities. During those sessions the classroom teacher (and reliability observers) kept records of each trainee's accuracy in the use of each of the ten elements of FIP listed previously. By placing a "+" or a "0" by each of the elements as the trainee worked through a role-played episode, a record of performance accuracy was collected. At the end of a role-played teaching trial, the teacher provided the trainee with information regarding their performance. This feedback, i.e., descriptive information about performance, was delivered with a positive tone and emphasized the good features of the trainee's performance.[1]

Experimental Conditions. Following role-playing to at least 80 percent accuracy with FIP, staff and volunteers were systematically observed in standard classroom one-to-one teaching situations. Periodic observing by a second supervisor ensured consistent application of supervisory intervention, and yielded inter-observer reliability coefficients in excess of 80 percent. Conditions of baseline, treatment and follow up were applied to each person in a sequential fashion (i.e., Multiple-baseline design, cf Baer, Wolf & Risley, 1968), to produce experimentally valid data. Those experimental conditions involved:

Baseline:	All eight classroom teaching assistants were observed as they worked in FIP teaching with students. No feedback nor observational comments were given.
Treatment:	According to the multiple baseline schedule, each teaching assistant was given supportive feedback by the classroom teacher immediately after completion of the observed FIP trial.
Follow-Up:	After an average of 4 feedback sessions were completed for each teaching assistant, the teacher stopped providing feedback, but did continue with unobtrusive observations.

Results of Training and Feedback on FIP Accuracy. All teaching assistants showed criterion accuracy (i.e., 80 percent) with FIP during role-played sessions and eventually exceeded that performance while working with students in the classroom. However, the contribution of supportive feedback in building that high level of accuracy is clear in the data collected over the experimental conditions. Specifically, only one of the teaching assistants exceeded the 80 percent criterion when first working with a child after the role-played learning of FIP. That person showed an average accuracy of

---

[1] Specific guidelines for accomplishing supportive feedback are contained on the record sheet used by the classroom teacher and include identifying "areas of strength" and other cues for positive comments in excess of corrective comments that may be needed.

83 percent in Baseline, but was inconsistent in applying FIP. All other teaching assistants showed accuracy below criterion in Baseline. However, as each person received supportive feedback, their accuracy climbed to the extent that the average accuracy for all but one person was over criterion. Even that one trainee did show periodic excellence, though quite variable and not adequate on the average. In Follow-Up, five of the original eight teaching assistants were available for observation. Again, all of them, except the trainee found to be variable during Treatment, showed excellent accuracy with FIP. That is, accuracy well in excess of 80 percent was observed. Table One presents a summary of the averages of accuracy data collected for the teaching assistants over the experimental conditions.

TABLE ONE

Average Percent Accuracy of FIP Usage by Eight Teaching Assistants Over Three Experimental Conditions

Experimental Conditions	Teaching Assistants							
	1	2	3	4	5	6	7	8
Baseline	56	55	61	51	70	83	54	69
Treatment	86	83	91	77	82	90	95	90
Follow-Up	-	-	-	57	86	93	90	98

Discussion of Results of Feedback on FIP Accuracy. The high levels of accuracy shown by the teaching assistants as they worked with individual children argues for routine delivery of supportive feedback. By clearly identifying the desired instructional performance, the classroom teacher was able to effectively teach, and later support, an active teaching role for volunteers, parents, and regular staff. Certainly, the failure of one adult to consistently display adequate teaching performance argues the need for more intensive training, or for the use of those "extra hands" in a non-instructional capacity (e.g., bulletin board design, clerical duties, etc.). Further, the use of criteria of 80 percent correct has been appropriate for teaching and using FIP techniques. Other staff skills might demand more or less stringent criteria. For example, another targeted staff skill, tracheal tube suctioning, has been successfully taught to a 100% criterion using those same role-play, training, and feedback procedures.

Other Aspects of Staff Utilization and Support. The accomplishment of observations and feedback, as described above, is clearly an important feature of staff support, but attention to the utilization of those staff is also needed. In the Big Sky Model, several approaches to increasing and encouraging the efficient and productive use of staff and volunteers are in place. One of them involves the observation of how effectively children's IEP objectives are being met through FIP teaching. More specifically, the classroom teacher keeps track of the IEP-based learning opportunities each child receives on a daily basis. By reviewing completed programs for each student, the teacher can see how many programs were completed for each child and can identify the range in the number of programs applied per child. Such a range could be from 1, for one student, to 6 for another student. By examining the range of completed programs, a numerical indication is developed for how fairly instructional opportunities were distributed that day. This method of reviewing how staff efforts are distributed across children is referred to as the Equity Discrepancy Score, and is more fully described below.

The Equity Discrepancy Score. The Big Sky Model classroom actively seeks volunteer efforts for the delivery of educational programs for the moderately/severely handicapped preschoolers it serves. Due to personal schedules, the actual number of teaching assistants present each day is variable. To make efficient use of all available hands, the classroom teacher maintains a schedule to direct staff and volunteers to work with individual students or lead group educational activities. Thus, classroom events are organized well, but exactly how much instructional effort is going to each child is affected by the schedule and the number of persons present.

As a shorthand method for examining these educational opportunities, the teacher computes an Equity Discrepancy Score computed in two steps as follows:

Step One: Review all student program record sheets, noting the number of programs completed.
Step Two: Subtract the smallest number of completed programs from the largest number of programs. The resultant number is the Equity Discrepancy Score.

By seeing the numerical size of the Discrepancy Score, the teacher can immediately determine if a fair or less-than-fair distribution of learning opportunities was accomplished that day. For example, if the range was from one, for one student, to six, for another student, the Equity Discrepancy Score would be five (i.e., 6 - 1 = 5), indicating a less than desirable distribution of FIP activities. On the other hand, a range of 4 to 6 would yield a score of two, which indicates reasonable fairness. Of course, a still lower Equity Discrepancy Score would be pleasing in showing an even more equitable distribution of teaching opportunities across students.

Research of the Equity Discrepancy Score in Staff Utilization. To demonstrate the usefulness of relying on the Equity Discrepancy Score as a guide to the fair utilization of staff efforts, a simple study was completed.

Setting and Subjects. Measures of completed programs and adjustments in classroom scheduling of staff and volunteers was completed in the Big Sky Model classroom.

Study Conditions. After all children's programs were developed, they were placed on clipboards, centrally located and readily available to all volunteers and staff. Three conditions affecting how staff and volunteer efforts may be distributed were examined. Those conditions were:

- Baseline: Teaching assistants were encouraged to work with children to the extent they chose.
- Instructions/List Posted: Teaching assistants were asked to work with children in an equitable way, i.e., to choose students not recently worked with as indicated by a posted list of student names with check marks for each program completed that day.
- Activities Assigned/Scheduled: Staff and volunteers were directed to work with specific children at particular times according to a central schedule.

Results of Instructions and Scheduling on Equity in Efforts. In Baseline, teaching assistants kept busy with children in individual and group learning situations. Despite an appearance of a fair distribution of teaching efforts across children, a direct count of the programs completed revealed distressing figures. In Baseline (i.e., six days) the number of FIPs completed per child per day showed ranges of as much as 0 to 6 and the best range was 1 to 3. That is, the Equity Discrepancy Score was as high as 6 and only reached 2 on the best day. The average Equity Discrepancy Score for Baseline was 4.0. Under conditions of Instructions and List Posted (15 days), the ranges of programs completed were much reduced and less variable. The average Equity Discrepancy Score for that condition was 2.0. While greatly improved, and probably adequate under most circumstances, the final condition of Activities Assigned and Scheduled was put in place to achieve an Equity Discrepancy Score of zero. That is, an even and totally fair distribution of learning opportunities was achieved (and continues) through direct scheduling of work assignments.

Discussion of Results of Scheduling on Equity in Teaching Efforts. The shorthand method of reviewing how equitably students received FIP teaching was very useful. The Equity Discrepancy Scores quickly and sensitively showed how well teaching efforts were distributed and underlined the importance of direct attention to classroom management. In addition, the scores provided a relatively objective basis for decision-making by the classroom teacher. As a result, the use of a set of assignments and a centralized schedule was put in place. That development probably would not have occurred without the helpful input provided by the Equity Discrepancy Score. Thus, the Staff Utilization and Support System is sensitive to both qualitative and quantitative dimensions of work performance directed toward students.

Conclusions

The strategies and studies reported above can be seen as serving to translate research methods into practical and useful applications for educators. While it is only a small part of comprehensive services, the Staff Utilization and Support System is an important part of the

Integrated Parent and Staff Skill Development component of the Big Sky Model. Inasmuch as existing curricula or instructional materials can be continued, local adoption of these procedures are relatively inexpensive. Further, the productive use of relatively inexpensive "extra hands" (e.g., parents and other volunteers) can greatly increase the number and equitable distribution of educational opportunities for all children. Joint training of parents and other staff appears to have considerable potential for generating rapport, ensuring instructional consistency, and minimizing staff and parent training costs.

References

Baer, D.M., Wolf, M.M., and Risley, R.R. Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis*, 1968, *1*, 91-97.

Hutinger, P., Kutcher, A., Smith-Dickson, B., and Hanners, B. *What's Rural? An Overview of Successful Strategies Used by Rural Programs for Young Handicapped Children*. The Rural Network/Western Illinois University Press, Macomb, Illinois, 1981.

Strickland, James. Exploratory Research on Motivators for Training of Paraprofessional Preschool Classroom Personnel. Second Annual Conference on Research in Action, Lubbock, Texas, 1983.

THE EFFECTS OF TRAINING PRESCHOOL TEACHERS IN TECHNIQUES FOR FOSTERING CHILDREN'S PLAY

Dr. Robert G. Collier
Western Illinois University
Macomb, Illinois

This study measured the long and short term effects of play training techniques, applied to preschool teachers, in a "natural" setting. Four variables were measured: teacher behavior, the children's verbal expression, divergent thinking, and play. A modified Flander's Interaction Analysis was used to measure teacher's behavior during "free play" time. Verbal expression of children was measured by the verbal expression section of the Illinois Test of Psycholinguistic Abilities. The children's divergent thinking skills were determined by Torrence's Creativity in Action and Movement Test. Children's play was viewed in terms of Smilansky's four play levels, Partern's social play scale and Smilansky's sociodramatic play ratings.

The subjects were 35 white, low-middle class children from two rural, midwest preschool centers. These included sixteen boys and seventeen girls, ranging in age from three years, no months to five years, five months. Eight preschool teachers participated, three in the experimental group and five in the control group. All teachers were either experienced with young children and/or college educated.

PROCEDURES

The study used a pretest, posttest, delayed posttest design, with the posttest data gathered six months after the onset of the study and the delayed posttest data collected one month after the end of the posttest. The control group participated only in the pretest, posttest and delayed posttest testing. The experimental group received the same, in addition to 11 two-hour sessions designed to train them in techniques for facilitating children's play.

The Schools Council Project for Structuring Play in the Infant/First School (1) was used as the experimental training program. The goals were to train the teachers in: 1) observing the learning and development occurring in children's play and 2) techniques for facilitating such play through appropriate adult provision and involvement. Through personal observations and use of the program's videotapes, the experimental teachers learned to define and recognize the forms of adult involvement. They practiced recognizing and developing objectives for their involvement and identifying the resulting effects.

RESULTS

The teacher behavior data, obtained during three 20 minute "free play" periods, was grouped into three areas: 1) teacher talk, 2) child talk and 3) no teacher interaction. The experimental teachers exhibited change in each category between the pretest and delayed posttest. Teacher talk increased from 36.6% on the pretest to 41% on the posttest and 44.7% on the delayed posttest. Child talk also increased for the experimental group from 20.8% to 27.6% to 28.2% respectively. No teacher interaction, displayed a consistent decline from 39.3% to 31% to 26.5%.

The control group teacher's data changed in the opposite direction. Teacher talk decreased from 48% to 43.6% to 37.5%. Child talk decreased from 21.6% to 18.3% and then increased to 19.5% on the delayed posttest. No teacher interaction, steadily increased from 30% to 38% to 42%.

The means and standard deviations for the children's ITPA verbal expression scores are found in Table 1. An analysis of covariance, applied to the posttest scores with the pretest as the covariate, indicated a significant difference between groups at the $p < .001$ level. The same procedure applied to the delayed posttest data, with the posttest as the covariate, yielded significant differences between groups at the $p < .001$ level.

The children's divergent thinking abilities were measured in three areas: fluency, originality and imagination. See Table 2 for the means and standard deviations for the experimental and control groups in each of these three areas.

An analysis of covariance, applied to the posttest data with the pretest data as covariate, indicated significant differences between groups for each of the three areas as the $p < .001$ level. The same analysis applied to the delayed posttest data, with the posttest as covariate, yielded significant differences between groups for all three areas of divergent thinking at the $p < .001$ level of significance.

Three aspects of children's play were measured to note any differences in the play levels between each group. The data represents the percentage that each play level appeared in the children's play for the three 10 minute observations that were taken at each testing period. The percentages were arrived at by analyzing the three written observations made of each child's play and noting the level of play evident. For a child to receive credit for demonstrating a specific play level, that level of play had to be noted at least once, in two of the three play observations made for each child during the testing period. The number of children receiving credit for any one play level was then divided by the number of children for that group, to arrive at a percentage score.

The results of applying Smilansky's four types of play to the children's play observations are found in Table 3. The data indicated no trends supporting differences in the play levels, nor developmental changes for either group.

Parten's social play data are listed in Table 4. The experimental group indicated a trend toward increased higher levels of social play (associative) with decreased lower levels of social play (parallel, solitary and onlooking). The control group data suggested no such trends.

Table 5 shows that the experimental groups sociodramatic play levels remained relatively consistent throughout the study. The control group showed a steady increase in the lower levels of sociodramatic play (no dramatic play and dramatic play) with constant decreases in the higher levels of sociodramatic play (poor and good sociodramatic play).

DISCUSSION

The results of this study suggest that play training applied to "real" preschool teachers may produce both short and long term effects for the four variables measured, in a "natural" setting. All variables, however, were not effected to the same degree.

The teacher behavior data suggests that play training seemed to stimulate increased interaction or dialogue between teachers and children. The experimental effects were mirrored by the opposite changes in the control group and were shown to escalate with time.

Verbal expression and divergent thinking skills, were both significantly affected by the experimental treatment for short and long term effects. Fluency and imagination aspects of divergent thinking skills were most effected, in that the experimental group's mean scores showed constant increases. The long term effects for imagination were found significant for main effect at the $p < .05$ level.

CONCLUSION

This study suggests that: 1) "real" preschool teachers, without extensive pretraining, can effect cognitive gains in their students by attempting to foster children's play and 2) the cognitive gains made by the children may escalate even after the termination of the experimental treatment. The positive results of this research indicate the need for further study in this area as a practical avenue for tapping cognitive and possibly social potential in children.

References

Manning, Kathleen and Sharp, Ann. Structuring Play in the Early Years at School, London: Ward Lock Educational, 1977.

Table 1

ITPA VERBAL EXPRESSION SCORES

	Pretest			Posttest			Delayed Posttest		
Group	Mean	SD	N	Mean	SD	N	Mean	SD	N
Experimental	15.00	6.79	19	15.37	7.89	19	20.77	9.45	17
Control	14.56	6.25	16	11.88	6.26	16	14.33	4.53	15

Table 2

MEAN FLUENCY SCORES CREATIVITY IN ACTION & MOVEMENT

	Pretest			Posttest			Delayed Posttest		
Group	Mean	SD	N	Mean	SD	N	Mean	SD	N
Experimental	13.79	8.86	19	13.11	5.32	18	15.94	6.79	17
Control	20.25	16.68	16	16.50	12.35	16	14.33	11.24	15

MEAN ORIGINALITY SCORES CREATIVITY IN ACTION AND MOVEMENT

	Pretest			Posttest			Delayed Posttest		
Group	Mean	SD	N	Mean	SD	N	Mean	SD	N
Experimental	13.61	11.28	18	12.39	7.01	18	13.65	7.01	17
Control	24.07	23.74	15	18.69	14.52	16	14.60	12.88	15

ANALYSIS OF COVARIANCE OF POST-IMAGINATION TEST WITH PRE-IMAGINATION TEST AS COVARIATE

	Pretest			Posttest			Delayed Posttest		
Group	Mean	SD	N	Mean	SD	N	Mean	SD	N
Experimental	15.37	2.77	19	16.11	2.61	18	18.62	1.62	17
Control	16.13	4.72	16	16.69	5.33	16	17.00	5.22	15

Table 3

PERCENTAGE OF TYPES OF PLAY AS MEASURED BY SMILANSKY'S PLAY SCALE

	Pretest		Posttest		Delayed Posttest	
	%	N	%	N	%	N
Experimental						
Functional	26.3	19	42.1	19	38.9	18
Constructive	36.8	19	36.8	19	44.4	18
Dramatic	84.2	19	84.2	19	61.1	18
Games	-0-	19	-0-	19	-0-	18
Control						
Functional	56.3	16	6.3	16	13.3	15
Constructive	37.5	16	18.8	16	40.0	15
Dramatic	68.8	16	83.8	16	66.7	15
Games	-0-	16	-0-	16	-0-	15

Table 4

PERCENTAGE OF SOCIAL PLAY LEVELS IN TERMS OF PARTEN'S SOCIAL PLAY SCALE

	Pretest		Posttest		Delayed Posttest	
	%	N	%	N	%	N
Experimental						
Onlooking	-0-	19	-0-	19	-0-	19
Solitary	47.4	19	36.8	19	44.4	18
Parallel	42.1	19	15.8	19	11.1	18
Associative	52.6	19	84.2	19	77.8	18
Cooperative	-0-	19	-0-	19	-0-	19
Control						
Onlooking	6.3	16	-0-	16	6.7	15
Solitary	31.3	16	37.5	16	46.7	15
Parallel	25.0	16	-0-	16	6.7	15
Associative	75.0	16	93.8	16	73.3	15
Cooperative	-0-	16	-0-	16	-0-	15

Table 5

PERCENTAGE OF DRAMATIC PLAY LEVELS ACCORDING TO SMILANSKY'S SOCIODRAMATIC PLAY SCALE

	Pretest		Posttest		Delayed Posttest	
	%	N	%	N	%	N
Experimental						
No Dramatic Play	26.0	19	32.0	19	28.0	18
Dramatic Play	-0-	19	-0-	19	11.0	18
Poor Sociodramatic Play	5.0	19	5.0	19	6.0	18
Good Sociodramatic Play	63.0	19	63.0	19	56.0	18
Control						
No Dramatic Play	6.0	16	25.0	16	33.0	15
Dramatic Play	-0-	16	-0-	16	7.0	15
Poor Sociodramatic Play	18.0	16	6.0	16	-0-	15
Good Sociodramatic Play	75.0	16	69.0	16	60.0	15

Research in Action II...
Special Interest Track

EARLY INTERVENTION RESEARCH INSTITUTE

Dr. David Shearer
Utah State University
Logan, Utah

ANNOUNCEMENT

Utah State University's Exceptional Child Center (ECC) was recently awarded a contract for a five-year, 1.8 million dollar research program: the Early Intervention Research Institute (EIRI). The EIRI is one of the only three Early Childhood Research Institute contracts in the nation awarded by competitive bidding procedure with the Special Education Rehabilitation Services Office of the U.S. Department of Education. Each Institute focuses on one broad area of research relevant to early intervention with handicapped children (infants through 6 years). The EIRI will focus its research on efficacy and cost effectiveness.

BACKGROUND

During the last 20 years, millions of dollars have been spent on the development, implementation, and evaluation of early intervention programs. A major contributor to the amount of resources devoted to early intervention programs for the handicapped has been the Handicapped Children's Early Education Programs (HCEEP). Originally funded by Congress in 1968, HCEEP began with 24 demonstration projects in 1969. Since that time, literally hundreds of demonstration projects have been developed and many of these projects have been widely replicated. For example, the Portage Project has now been officially replicated in over 170 sites in the United States, and its materials have been used by hundreds of other programs. In the past 12 years, HCEEP demonstration projects have served nearly all categories of handicapping conditions. The ages of the children served have ranged from birth to 8 years with over 50% being 3 years and under and nearly 90% being 5 years and under.

Resources for early intervention have not been limited to the federal government. Deweerd (1981) noted that for each child who received early intervention services from federally-funded demonstration projects, four children were being served by other agencies through a combination of service programs and replication models.

PROBLEMS TO ADDRESS

While the concept of early intervention has been widely embraced by individual practitioners, states, and federal funding agencies, the research evidence on the effectiveness of early intervention is often paradoxical, confusing or incomplete. Problems most often emanate from inadequate measurement of all the factors determining "effects", techniques in summarizing apparent discrepant results, and lack of consideration of long-term effects from early intervention. Also, to determine worth, one must simultaneously consider both benefits or effects of the program and the costs of the program. Stated differently, how much worth something has depends on "what you get" for "what you pay".

In reality, the important step in integrating the findings of the completed research on the effectiveness of early intervention into conclusions which affect practice and influence policy has not occurred. What is needed is an integrative review of sufficient scope and appropriate methodology to organize and make sense out of the hundreds of studies which have been completed regarding the effectiveness of early intervention.

MISSION AND RESEARCH THRUST

The mission of this Institute is to expand the knowledge base and improve understanding of the efficacy and cost effectiveness of early intervention for handicapped children. During the first year of the Institute, this mission will be addressed by three interrelated research thrusts and a number of other activities involving training, dissemination of information, and evaluation of the Institute's impact. While this first year of the Institute can be viewed as a "planning period", the unique nature of the Year #1 research projects will answer important questions regarding the efficacy and cost effectiveness of early intervention as well as providing the foundation for planning and directing the efforts of Years #2-5.

Meta-analysis: Integrating completed research. The first project will utilize recently developed meta-analysis techniques for integrating the hundreds of completed research reports concerning early intervention with handicapped populations. From this systematic and comprehensive integration of existing research, the Institute will determine what conclusions can be drawn from existing research, what gaps exist, and how conclusions about effectiveness are different among various subgroups of children or families (e.g., severity of handicapping condition, type of handicap, level of SES).

Comprehensive cost-effectiveness analysis. The second research project will utilize state-of-the-art techniques for analyzing cost effectiveness of programs to examine the relative cost effectiveness of two different delivery modes (home-based and center-based) of early intervention with handicapped children. The most important outcome of this research thrust will be the development of procedures and "ingredients" for doing cost effectiveness analyses of early intervention programs for the handicapped. In subsequent years of the EIRI, these procedures will be applied to other questions and issues identified from the meta-analysis or through interaction with the field. Concurrently, this first year's thrust will also provide important information about the cost effectiveness of two different delivery modes--an important and worthwhile question in and of itself.

Primary research in early intervention impact. The third research thrust for Year #1 will take advantage of a unique data base to examine a question about the effectiveness of early intervention for which it appears that very few data exist-the long-term impact of early intervention with hearing impaired children. Three groups of hearing impaired children (each group with 25 children) born between 1973 and 1975 will be compared on a variety of dependent variables. One of these groups received early intervention through Project SKI*HI (a nationally disseminated early intervention project for hearing impaired children based at Utah State University) before 30 months of age, a second group received intervention from project SKI*HI after 30 months of age, and, a third group did not receive any early intervention.

Dissemination. In addition to the research thrust, the Institute will be disseminating information to a broad national audience of parents, professionals and policy makers concerned with early intervention. The EIRI will also be training graduate students, collaborating with other institutes, and working with a broad range of practitioners in the field.

THE EIRI STAFF

The principal staff includes Director, Dr. Glendon Casto; Co-Director, Dr. Karl White, currently Director of the Planning and Evaluation Program, ECC; Co-Principal Investigators, Dr. Cie Taylor, Research Associate, ECC, and David Shearer, Program Administrator with the Intermountain Plains Regional Resource Center, ECC; and Dr. Ann Austin of the Department of Family and Human Development, U.S.U. The Advisory Committee for the EIRI includes a number of nationally known research professionals including Gene V. Glass, one of the country's leading research methodologists, University of Colorado; Henry Levin, the foremost cost effectiveness/cost benefit analyst in education, Stanford University; Craig Ramey, with the Carolina Institute for Research and Early Education, University of North Carolina and Merle Karnes of the Institute for Child Behavior, University of Illinois, both leading early intervention researchers. The Advisory Committee will assemble in Logan, Utah, on October 20 and 21 to give further direction to the research thrust.

For additional information regarding the Institute, please forward inquiries to Ms. Yvette Durbin, Exceptional Child Center, UMC 68, Logan, Utah 84322, or telephone (801) 750-1997.

RESEARCH IN ACTION II CONFERENCE
February 9-11, 1983
Institute for Child and Family Studies
Texas Tech University

Participant Affiliation (Check One)

____ College-University

____ Head Start

____ Private Childcare

____ Other (Identify) ______________________________

____ Public Childcare

____ Public School

____ State Agency

CONFERENCE CONTENT

I. Interest Sessions (Circle One)

A. Quality of interest sessions: Excellent Good Fair Poor

B. Degree that sessions met expectations: Excellent Good Fair Poor

C. Indicate interest sessions helpful to you:

1. ______________________________

2. ______________________________

3. ______________________________

II. General Sessions (Circle One)

A. Quality of general sessions: Excellent Good Fair Poor

B. Degree sessions met expectations Excellent Good Fair Poor

C. Indicate general sessions most helpful to you:

1. ______________________________

2. ______________________________

III. Conference Logistics/Availability

A. Conference Facilities: Excellent Good Fair Poor

B. Hotel Accommodations: Excellent Good Fair Poor

C. Transportation: Excellent Good Fair Poor

D. Pre-Conference Information: Excellent Good Fair Poor

E. Content of Conference: Excellent Good Fair Poor

F. Conference Design: Excellent Good Fair Poor

OVER PLEASE

GENERAL COMMENTS

IV. What did you like best about the Conference?

V. What did you like least about the Conference?

VI. Suggestions for Conference next year:

VII. Any additional comments:

Researc[illegible] II...
Presc[illegible]

PRESENTERS AND KEYNOTE SPEAKERS

Rudy Arredondo, M.D.
Associate Professor of Psychiatry
Texas Tech University School of Medicine
1C 178 HSC Bldg.
Texas Tech University
Lubbock, Texas 79430
(806) 743-2804

Gail Bell
East Texas Human Development Corporation
P.O. Box 1343
Marshall, Texas 75670
(214) 938-6605

Arnoldo Benavides, Director
Regional Training Office
Pan American University
Edinburg, Texas 78539
(512) 381-2571

Nancy Benz, Executive Director
Day Care Association of Lubbock
1220 Broadway, Suite 907
Lubbock, Texas 79401
(806) 765-9981

Lucy C. Biggs
Associate Commissioner for Developmental Services
Administration for Children, Youth and Families
Office of Developmental Services
Department of Health and Human Services
P.O. Box 1182, Donohoe Bldg., Room 5030
Washington, D.C. 20013
(202) 755-7768

Otis Brothers
Commodore
Montgomery Wards
5001 Boston
Lubbock, Texas 79413
(806) 795-8221

Michael J. Bourgeois, M.D.
Assistant Professor of Pediatrics
Texas Tech University School of Medicine
4B 118 HSC Bldg.
Texas Tech University
Lubbock, Texas 79430
(806) 743-2338

Dr. Lyndal Bullock
Special Education Department
North Texas State University
Denton, Texas 76203
(817) 565-2937

Dr. Bettye McDonald Caldwell
Donaghey Distinguished Professor of Education
College of Education
University of Arkansas at Little Rock
33rd and University
Little Rock, Arkansas 72204
(501) 569-3422

Cesar Cantu, M.D.
Resident
Texas Tech University School of Medicine
1C 143 HSC Bldg.
Texas Tech University
Lubbock, Texas 79430
(806) 743-2757

Nina M. Carran
Supervisor, Preschool Services
Western Hills Area Education Agency
1520 Morningside Ave.
Sioux City, Iowa 51106
(712) 274-6010

David K. Carson
Home and Family Life
College of Home Economics
Box 4170
Texas Tech University
Lubbock, Texas 79409
(806) 742-3000

Dr. Glendon Casto
Director, Early Intervention Research Institute
Exceptional Child Center
UMC 68
Logan, Utah 84322
(801) 750-2000

Dr. Jack Cole
Associate Professor, Special Education Component
College of Education
New Mexico State University
Box 3AC
Las Cruces, New Mexico 88003
(505) 646-2402

Dr. Robert G. Collier
Assistant Professor
Elementary Education/Reading Department
Western Illinois University
Macomb, Illinois 61455
(309) 298-1748

Dr. Anita P. DeFrantz
Associate Professor
University of San Francisco
San Francisco, California 94127
(415) 666-6289

Dr. Rheta DeVries
Associate Professor and Director
Human Development Laboratory
Department of Human Development and Consumer Sciences
University of Houston
4388 Varsity Lane
Houston, Texas 77004
(713) 749-3121 or 1378

Maria de los Angeles V. Dumont
New Mexico T/TA Program Director
Community Development Institute
110 Second St. S.W., Room 214
Albuquerque, New Mexico 87102
(505) 243-4898

Dr. Nancy Hope Eisenberg
Department of Psychology
Arizona State University
Tempe, Arizona 85287
(602) 965-5217

Dr. Alfredo Flores
Research Project Administrator
Institute for Child and Family Studies
Texas Tech University
Box 4170
Lubbock, Texas 79409
(806) 742-3261

Therese Freeman, Handicap Coordinator
Tri-County Community Action
827 Shelbyville
Center, Texas 75935
(713) 598-2476

Betty Gaines
Assistant Professor
Psychology Department
Midland College
Midland, Texas 79701
(915) 684-7851, ext. 208

Gloria Galey
DEBT Project Coordinator
Lubbock Independent School District
1628 19th Street
Lubbock, Texas 79401
(806) 747-2641

Rafael Garcia, M.D.
Instructor of Pediatrics
Texas Tech University School of Medicine
4B 102 HSC Bldg.
Texas Tech University
Lubbock, Texas 79430
(806) 743-2332

Barbara Gibson
Assistant Professor
College of Human Resources and Education
702 Allen Hall
West Virginia University
Morgantown, West Virginia 26506
(304) 293-2110

Bee Gold
Child, Youth and Family Services
1741 Silver Lake Blvd.
Los Angeles, California 99026
(213) 664-2937

Sarah M. Greene
Head Start Director
P.O. Box 2276
Bradenton, Florida 33506
(813) 746-0137 or 747-7521

Thomas Griffin
Resource Development Project
Community Development Institute
P.O. Box 80026
Albuquerque, New Mexico 87198
(505) 268-5309

Carolyn Hake
Health/Handicap Specialist
Region VI Administration for Children, Youth and Families
1200 Main Tower, 20th Floor
Dallas, Texas 75202
(214) 767-2981

Dr. Elizabeth Haley
Dean, College of Home Economics
Box 4170
Texas Tech University
Lubbock, Texas 79409
(806) 742-3031

Father Curtis Halfmann
St. Joseph's Church
205 S. 19th St.
Slaton, Texas 79363
(806) 828-3944

Dr. Barbara Hanners
Associate Professor Human Behavioral Sciences
Speech and Hearing Center
Mississippi University for Women
P.O. Box W-1340
Columbus, Mississippi 39701
(601) 328-9601

Dr. Timothy B. Harris
Associate Professor, Human Behavioral Sciences
Speech and Hearing Center
Mississippi University for Women
P.O. Box W-1340
Columbus, Mississippi 39701
(601) 328-9601

Gerald Hastings
Director, Head Start Division
Region VI Administration for Children, Youth and Families
1200 Main Tower, 20th Floor
Dallas, Texas 75202
(214) 767-2981

Dr. Ralph M. Hausman
Associate School Psychologist
Ector County Independent School District
Special Education Department
Box 3912
Odessa, Texas 79760
(915) 332-9151, ext. 312

Warren Havens
Radio Shack
3625 34th Street
Lubbock, Texas 79413
(806) 793-1467

Lezlie Pearce-Hopper
Instructor, Human Behavioral Sciences
Speech and Hearing Center
Mississippi University for Women
P.O. Box W-1340
Columbus, Mississippi 39701
(601) 328-9601

Marilyn J. Bloom-Horn
Training Specialist
Institute for Child and Family Studies
Box 4170
Texas Tech University
Lubbock, Texas 79409
(806) 742-3294

Dr. Gail House
Assistant Professor
Family, Management, Housing and Consumer Science
Box 4170
College of Home Economics
Texas Tech University
(806) 742-1941

Dr. Patricia Hutinger
Macomb O-3 Regional Project
27 Horrabin Hall
Western Illinois University
Macomb, Illinois 61455
(309) 298-1634

Dr. Jeanette Jenkins
Assistant Professor
Home and Family Life
College of Home Economics
Box 4170
Texas Tech University
Lubbock, Texas 79409
(806) 742-3014

Dr. Dee LaMont Johnson
College of Education
Box 4560
Texas Tech University
Lubbock, Texas 79409
(806) 742-2316

Amy Jones
Research Assistant
Institute for Child and Family Studies
Texas Tech University
P.O. Box 4170
Lubbock, Texas 79409
(806) 742-1377

Dr. J. Knox Jones, Jr.
Vice-President for Research and Graduate Studies
Texas Tech University
P.O. Box 4540
Lubbock, Texas 79409
(806) 742-2152

Dr. Jennie Klein
7921 Maryknoll Avenue
Bethesda, Maryland 20817
(301) 229-4995

Dr. Michael Lewis
Institute for the Study of Child Development
Department of Pediatrics
Rutgers Medical School-UMDNJ
Academic Health Science Center
CN-19
New Brunswick, New Jersey 08903
(609) 937-7618

Manda Lively
Mathematics Consultant
Education Service Center, Region VI
3332 Montgomery Road
Huntsville, Texas 77340
(713) 295-9161

Dr. Stephen G. Maddox
Medical Director
Child Study Center
1300 West Lancaster
Ft. Worth, Texas 76102
(817) 336-8611

Ruth Marshall
Head Start Director
Gulf Coast Community Service Association
4902 San Jacinto
Houston, Texas 77004
(713) 522-8200

Dr. Hazel E. Marsicano
Assistant Professor, Early Childhood Education
Department of Curriculum and Instruction
College of Human Resources and Education
West Virginia University
Morgantown, West Virginia 26506
(304) 293-3442

Dr. Paul McGhee
Associate Professor
Department of Home and Family Life
College of Home Economics
Box 4170
Texas Tech University
Lubbock, Texas 79409
(806) 742-2891

Bill McLucas
Wang Laboratories, Inc.
5607 Villa Drive
Lubbock, Texas 79412
(806) 762-6789

Johnette Mihatsch
Head Start Director
Tri-County Community Action, Inc. Head Start
827 Shelbyville Street
Center, Texas 75935
(713) 598-2476

Evelyn K. Moore
Executive Director
National Black Child Development Institute, Inc.
1463 Rhode Island Avenue, N.W.
Washington, D.C. 20005
(202) 387-1281

Eloy Musquiz
San Felipe-Del Rio Independent School District
P.O. Drawer 1229
Del Rio, Texas 78840
(512) 774-3521

Rubilee Nobles
Supervisor, MR and Early Childhood Programs
Ector County Independent School District
Special Education Department
Box 3912
Odessa, Texas 79760
(915) 332-9151

Grayce Xenia O'Chuk
4348 Toyon Circle
LaVerne, California 91750
(714) 596-3360

Maryann O'Leary
Training Specialist
Institute for Child and Family Studies
Box 4170
Texas Tech University
Lubbock, Texas 79409
(806) 742-3294

Ella Perry
Tyler Independent School District
Box 2035
Tyler, Texas 75701
(214) 595-0700

Dr. Nancy Quisenberry
Associate Dean for Undergraduate Studies
College of Education
Southern Illinois University
Carbondale, Illinois 62901
(618) 453-2415

John Reese
Project Head Start of St. Joseph Co.
635 South Main Street
South Bend, Indiana 46601
(219) 234-2150

Craig Reitan
Unisource Electronics, Inc.
2807 74th Street
Lubbock, Texas 79423
(806) 745-8835

Stuart Reynolds
State Resource Project Coordinator
Institute for Child and Family Studies
Branch Office
818 East 53rd Street
Austin, Texas 78751
(512) 451-2567

Earl Richardson
Parent Program/Social Services Specialist
Region VI Administration for Children, Youth and Families
1200 Main Tower, 20th Floor
Dallas, Texas 75202
(214) 767-2981

Jeri Rieken
Retired Senior Volunteer Program (RSVP)
Box 4170
Texas Tech University
Lubbock, Texas 79409
(806) 742-2423

Dr. James Robins
Assistant Professor in Family Medicine
Texas Tech University School of Medicine
Office 1-C 244
Health Sciences Building
Lubbock, Texas 79430
(806) 743-2770

Ray Santos, M.D.
3814 22nd Place
Lubbock, Texas 79416
(806) 792-4743

Sam Scheef
Agriplex Electronics, Inc.
3206-A 34th Street
Lubbock, Texas 79410
(806) 797-4495 or (800) 792-1063

Dr. Carolyn Schluck
Associate Professor
Department of Childhood, Reading and Special Education
115 Education Building
The Florida State University
Tallahassee, Florida 32306
(904) 644-5458

Mary Seay
Writing Consultant
Education Service Center, Region VI
3332 Montgomery Road
Huntsville, Texas 77340
(713) 295-9161

L. Chris Seil
Bilingual Teacher
Wolffarth Elementary School
Lubbock Independent School District
Lubbock, Texas 79401
(806) 765-7751

Dr. David Shearer
Co-Principal Investigator
Early Intervention Research Institute
Exceptional Child Center
UMC 68
Logan, Utah 84322
(801) 750-1122

Dale Smith
Management Information Specialist
Institute for Child and Family Studies
Texas Tech University
Box 4170
Lubbock, Texas 79409
(806) 742-1377

Dr. Connie Steele
Chairperson, Department of Home and Family Life
College of Home Economics
Box 4170
Texas Tech University
Lubbock, Texas 79409
(806) 742-3000

Dr. Stephen W. Stile
Associate Professor, Special Education Component
College of Education
New Mexico State University
Box 3AC
Las Cruces, New Mexico 88003
(505) 646-2402

Charlotte Stokes
Community Action of Nacogdoches
P.O. Box 1938
Nacogdoches, Texas 75961
(713) 564-1142

C. Bondred Stout
Student Assistant
Home and Family Life
College of Home Economics
Texas Tech University
Box 4170
Lubbock, Texas 79409
(806) 742-3014

Jerry Stover
Texas Training and Technical Assistance Manager and Regional
T/TA Liaison
Region VI Administration for Children, Youth, and Families
1200 Main Tower, 20th Floor
Dallas, Texas 75202
(214) 767-2981

Janice Strand
902 Twin Diamond Road
Roswell, New Mexico 88201
(505) 622-7312

James Strickland
Executive Director
Child, Inc. Head Start
818 E. 53rd
Austin, Texas 78751
(512) 451-7361

Tommy Sullivan
Regional Program Director
Region VI Administration for Children, Youth, and Families
1200 Main Tower, 20th Floor
Dallas, Texas 75202
(214) 767-2981

Regina Swearengen
South Plains Consortium Manager
Institute for Child and Family Studies
Box 4170
Texas Tech University
Lubbock, Texas 79409
(806) 742-1944

Vincent Taylor
Research Assistant
Institute for Child and Family Studies
Texas Tech University
Box 4170
Lubbock, Texas 79409
(806) 742-1377

Barbara Thompson
Educational Division
Texas Instruments, Inc.
Lubbock, Texas 79408
(806) 741-2000

Dr. Lillian E. Troll
Psychology Department
Rutgers University
39 Easton Avenue
New Brunswick, New Jersey 08903
(201) 932-7292

Rick van den Pol
Big Sky Early Education Center
Montant UAP
University of Montana
Missoula, Montana 59812
(406) 243-5467

Dr. William Wachtel
Researcher
Office of Research and Evaluation
El Paso Public Schools
P.O. Box 20100
El Paso, Texas 79998
(915) 779-4471

Dr. Mary Ann Waldon
Early Childhood Chairperson
Education Department
Texas Southern University
3100 Cleburne
Houston, Texas 77004
(713) 527-7788

Faye Warmsley
Rusk Cherokee Community Action Program
P.O. Box 1843
Jacksonville, Texas 75766
(214) 586-3577

Dr. David Weikart
President, High/Scope Educational Research Foundation
600 North River St.
Ypsilanti, Michigan 48197
(313) 485-2000

Dr. Paul A. Wirth
Director of Adult Education
Los Lunas Hospital and Training School
Los Lunas, New Mexico 87031
(505) 865-9611

Richard Wuest
Computerland
6223 Slide Road
Lubbock, Texas 79414
(806) 792-3835

Tim Young
Research Assistant
Institute for Child and Family Studies
Box 4170
Texas Tech University
Lubbock, Texas 79409
(806) 742-1377

Dr. Gloria Zamora
IDRA
5835 Callahan Road, Suite 350
San Antonio, Texas 78228
(512) 684-8180

FACILITATORS

The following people are serving as facilitators for the RESEARCH IN ACTION II Conference. Their assistance is greatly appreciated.

DEPARTMENT OF HUMAN RESOURCES
P.O. BOX 10528
LUBBOCK, TEXAS 79408

Susan Erickson
Licensing Representative
(806) 762-8922, ext. 539

TEXAS HEAD START DIRECTORS/ADMINISTRATORS

Susie Acosta
Community Council of Reeves County
Box 2096
Pecos, TX 79772
(915) 644-2479

Roberto Aguilar
Nueces County Community Action Agency
3105 Leopard S. #1
Corpus Christi, TX 78408
(512) 883-7201

Alice Jane Allen
Hill Country Community Action Agency
2905 W. Wallace/P.O. 846
San Saba, TX 76877
(915) 372-5167

Ms. Marilyn Allen
Economic Advancement Corporation of the Gulf Coast
P.O. Box 1685
Bay City, TX 77414
(713) 245-6901

Rex Ansley
West Orange Cove ISD
P.O. Box 1107
Orange, TX 77630
(713) 886-4462

Ron Arrington
Denton ISD
1205 University, Dr. W.
Denton, TX 76201
(817) 387-6151

Delores Babers
Bonham ISD
P.O. Box 490
Bonham, TX 75418
9214) 583-5526

Glenn Bagley
Dallas Parent Child Center
2850 Singleton
Dallas, TX 75212
(214) 638-2560

Gail Bell
East Texas Human Development Corporation
Box 1343
Marshall, TX 75670
(214) 938-6605

Harold Bentley
Big Spring ISD
1107 N.W. 7th St.
Big Spring, TX 79720
(915) 267-8245

Marie Bently (Acting)
Community Action of Nacogdoches
P.O. Box 1936
Nacogdoches, TX 75961
(713) 564-2491

Julian Bermea
Community Council of Southwest Texas
Drawer 1709
Uvalde, TX 78801
(512) 278-7502

Cherry Boggess
Economic Opportunities Development Corporation of
Planning Region XI
932 N. 9th St.
Waco, TX 76707
(817) 753-5324

Bill Bretzke
Community Council of Southwest Texas
Drawer 1709
Uvalde, TX 78801
(512— 278-7502

Genell Brown
Economic Opportunities Advancement Corporation of
Cottle, Foard, Hardeman & Wilbarger Counties
P.O. Box 546
Crowell, TX 79227
(817) 684-1571

Lucille Brown
West Orange Cove ISD
P.O. Box 1107
Orange, TX 77630
(713) 883-7863

Dr. H. R. Burnet
College Station ISD
100 Anderson St.
College Station, TX 77840
(713) 696-8893

Argus Burnett
Texas Panhandle Community Action Agency
P.O. Box 32150
Amarillo, TX 79102
(806) 372-2531

Manuel Carrasco
Midland ISD
702 North "N"
Midland, TX 79701
(9150 683-6176

Betty Carter
Greater Opportunities of the Permian Basin
P.O. Box 3922
Odessa, TX 79763
(915) 333-3373

Armando Castillo
Laredo Webb Community Action Agency
P.O. Box 2125
Laredo, TX 78041
(512) 722-0021

Marjorie Chambers
Community Council of South Central Texas
205 E. Wienert
Seguin, TX 78155
(512) 379-2663

Mr. Daniel Clark
South Park ISD
1025 Woodrow
Beaumont, TX 77705
(713) 838-5261

Claire Collier
South Park ISD
1025 Woodrow
Beaumont, TX 77705
(713) 832-8326

H. G. Connally
Region XVI Education Service Center
P.O. Box 30600
Amarillo, TX 79102
(806) 376-5521

Dolores Cox
Project Bravo
747 E. San Antonio
El Paso, TX 79901
(915; 544-4406

E. L. Cox
Liberty ISD
2525 Grand
Liberty, TX 77575
(713) 336-3582

Jack Davidson, Supt.
Tyler ISD
Box 2035
Tyler, TX 75701
(214) 595-3481

Kenneth Deckard
Taylor County Community Action Agency
400 N. Willis
Abilene, TX 79603
(915) 673-5785

Delia Dela Rosa
Central Texas Opportunities
Box 820/800 E. 2nd St.
Coleman, TX 76834
(915) 625-4167

Thurman Dorsey
Economic Opportunities Advancement Corporation of
Planning Region XI
932 North 9th St.
Waco, TX 76707
(817) 753-0331

Myra Duff
North Texas Community Action
Box 808
Ringgold, TX 76261
(817) 872-3562

Flogene Ebeling
Williamson Burnett County Opportunities, Inc.
P.O. Box 740
Georgetown, TX 78626
(512) 863-3200

Davis Edwards
Tom Green Community Action Agency
815 N. Randolph
San Angelo, TX 76901
(915) 655-1671

Clara Eldredge
Galveston County Community Action Inc.
P.O. Box 3206
Galveston, TX 77705
(713) 762-9019

Rawleigh Elliott
Williamson Burnett County Opportunities, Inc.
P.O. Box 740
Georgetown, TX 78626
(512) 863-2200

Connie Erickson
Fredericksburg Child Development Agency
712 W. Main
Fredericksburg, TX 78624
(512) 997-5433

Barbara Erwin
Bryan ISD
2200 Villa Maria Rd.
Bryan, TX 77801
(713) 775-3213

Nelda Escobar
Community Action Corporation of South Texas
P.O. Drawer 1820
Alice, TX 78332
(512) 664-0145

Janet Everheart
West Texas Opportunities, Incorporated
P.O. Box 1306
Lamesa, TX 78331
(806) 872-8354

Sam Evins Supt.
San Felipe Del Rio ISD
P.O. Drawer 1229
Del Rio, TX 78840
(512) 774-3521

George E. Flannigan
Gulf Coast Community Services Agency
6300 Bowling Green
Houston, TX 77021
(713) 748-4410

Ann Fletcher
Lubbock ISD
1628 19th St.
Lubbock, TX 79401
(806) 747-2641

Aron J. Floyd
Dallas County Community Action Agency
2208 Main St.
Dallas, TX 75201
(214) 742-2500

Ann Freeman
Community Council of Cass, Marion and Morris Counties
P.O. Box 427
Linden, TX 75563
(214) 756-5596

Winnie Freeman
Community Council of Cass, Marion and Morris Counties
P. O. Box 427
Linden, TX 75563
(214) 756-5596

Adelina Fritz
Parent Child Incorporated
P.O. Box 9313
San Antonio, TX 78204
(512) 226-6232

Gwendolyn Gragg
Day Care Association of Fort Worth and Tarrant County
1819 Hemphill St.
Fort Worth, TX 76110
(817) 921-3604

Irving Gray
Project Bravo
747 E. San Antonio
El Paso, TX 79901
(915) 544-4406

Pedro Grimaldo
Cameron & Willacy Counties Projects Incorporated
3549 E. 14th, Suite A
Brownsville, TX 78520
(512) 546-3163

Adela Guerrero
Community Action of South Texas
P.O. Drawer S
Rio Grande City, TX 78582
(512) 487-2585

Honorable Romero Guerro
Hidalgo County Head Start
P.O. Box 1356
Edinburg, TX 78539
(512) 383-0706

Suni Daniels Hart
Brazos Valley Community Action Agency
413 Varisco Building
Bryan, TX 77801
(713) 779-7403

C. D. Henry
San Angelo ISD
100 Magdalen
San Angelo, TX 76901
(915) 658-3511

Dr. Bill Holifield, Supt.
Plano ISD
1517 Ave. H
Plano, TX 75074
(214) 424-5602

Linda Holloway
Economic Opportunities Development Corporation of
Atascosa, Karnes & Wilson Counties
100 S. Second St., Dr. C
Kenedy, TX 78119
(515) 583-2256

Jack Hood
Detroit ISD
P.O. Box 219
Detroit, TX 75436
(214) 674-4245

Ms. Joyce Hyak
Community Action Council of Victoria Texas
P.O. Box 2142
Victoria, TX 77902
(512) 578-1508

Beverly Ihinger
Bunche Early Childhood Center—Midland ISD
700 South Jackson
Midland, TX 79701
(915) 683-6176

Arlee Jackson
Lubbock ISD
1628 19th St.
Lubbock, Texas 79401
(806) 747-2641

Corina Jaimes
Community Action Incorporated
P.O. Box 644
San Marcos, TX 78666
(512) 392-1161

Mona Jones
Taylor County Community Action Agency
520 N. 9th St.
Abilene, TX 79601
(915) 673-5748

A. R. Kampschafer
Cause, Incorporated
Box 438
Hillsboro, TX 76645
(817) 582-3423

Lonnie Kellum
Rusk Cherokee Community Action Program
P.O. Drawer 1630
Henderson, TX 75652
(214) 657-6503

Karen Kuleum
Palo Pinto Community Action Agency
Rt. 3, Bldg. 367
Mineral Wells, TX 76067
(817) 325-7861

Sue Kuykendall
Cause, Incorporated
Box 438
Hillsboro, TX 76645
(817) 582-8611

Jo Lange
Alabama-Coushatta Tribal Council
Route 3, Box 640
Livingston, TX 77351
(713) 563-4666

M. L. Leonard
Liberty ISD
2525 Grand
Liberty, TX 77575
(713) 336-3581

Howard Maddera
South Plains Community Action Corporation
Box 610, 411 Austin
Levelland, TX 79936
(806) 894-3549

Margaret Maenius
Stonewall Head Start
Trinity Lutheran Church
Stonewall, TX 78671
(512) 644-2479

Dale Marisco
Brazos Valley Community Action Agency
413 Varisco Building
Bryan, TX 77801
(713) 779-7443

Ruth Marshall
Gulf Coast Community Services Agency
4902 San Jacinto
Houston, TX 77004
(712) 522-8200

Sylvia Martinez
Laredo-Webb County Community Action Agency
P.O. Box 2125
Laredo, TX 78041
(512) 722-0021

Trino Martines
Bee County Community Action Agency
P.O. Box 1540
Beeville, TX 78102
(512) 358-5530

John McAfee
Terrell ISD
P.O. Box 776
Terrell, TX 75160
(214) 563-1443

Tom McClung, Jr.
East Texas Human Development Corporation
P.O. Box 1343
Marshall, TX 75670
(214) 563-1443

Jim Metcalf
Palo Pinto Community Action Agency
314 N.W. 4th St.
Mineral Wells, TX 76067
(817) 325-6944

Johnette Mihatsch
Tri-County Community Action Agency
827 Shelbyville St.
Center, TX 75935
(713) 598-2472

Jim Mohler
Tom Green Community Action Agency
P.O. Box 694
San Angelo, TX 76902
(915) 653-2411

Viola Mojica
West Texas Opportunities Incorporated
P.O. Box 1308
Lamesa, TX 79331
(806) 872-2134

Evelyn Moore
Child Development Council of Brazoria County
1103 South Valesco
Angleton, TX 77515
(713) 331-6101

Jane Morgan
Plano ISD
1517 Ave. H
Plano, TX 75074
(214) 424-5602

Dr. Steve Morgan
Big Spring ISD
1107 N.W. 7th St.
Big Spring, TX 79720
(915) 267-7452

Eloy Musquiz
San Felipe-Del Rio ISD
P.O. Drawer 1229
Del Rio, TX 78840
(512) 774-3521

David Ojeda
Community Action of Frio, Lasalle and Dimmitt Counties
P.O. Box 488
Carrizo Springs, TX 78834
(512) 876-5219

Tom Oxford
Child Services Incorporated
1717 Ave. K., Rm. 206
Lubbock, TX 79401
(806) 763-5261

Ruth Paul
Community Services Incorporated
P.O. Box 612
Corsicana, TX 75110
(214) 872-2401

Phyllis Perkins
College Station ISD
1300 Jersey St.
College Station, TX 77840
(713) 696-8893

Ella Perry
Tyler ISD
Box 2035
Tyler, TX 75710
(214) 595-0700

Roland Poncho
Alabama-Coushatta Tribal Council
Route 3, Box 640
Livingston, TX 77351
(713) 563-4391

Ron Preston, Supt.
Goldberg ISD
Route 1
Bowie, TX 76230
(817) 872-3562

Steve Quitta
Combined Community Action
P.O. Box 653
Smithville, TX 78957
(512) 237-2434

Manuela Rendon
Cameron & Willacy Counties Project, Incorporated
3549 E. 14th, Suite A
Brownsville, TX 78520
(512) 546-3163

Marilyn Roberson
Denton ISD
1205 University, Dr. W
Denton, Tx 76201
(817) 382-0743

John Rodriquez
Nueces County Community Action Agency
3105 Leopard, Suite 1
Corpus Christi, TX 78408
(512) 883-7201

Pedro G. Rodriguez
San Patricio County Committee on Youth, Education and
Job Opportunities
512 E. Sinton
Sinton, TX 78387
(512) 364-4290

Ms. June Rose
Galveston County Community Action Council
P.O. Box 3206
Galveston, TX 77550
(713) 744-6346

Michele Rowcroft
Community Council of South Central Texas
430 Mill Street
New Braunfels, TX 78130
(512) 625-7591

Ms. Blanche Russ
Parent-Child, Incorporated
P.O. Box 9313
San Antonio, TX 78204
(512) 226-6232

Francisco G. Zarate
Community Action Council of South Texas
P.O. Drawer S
Rio Grande City, TX 78582
(512) 487-2585

Mike Zuniga
Central Texas Opportunities
Box 820
Coleman, TX 76834
(915) 625-4167

COOPERATING AGENCIES

The following agencies assisted the Institute for Child and Family Studies in the RESEARCH IN ACTION II Conference. Their assistance and contributions are greatly appreciated.

UNIVERSITY CENTER
TEXAS TECH UNIVERSITY
P.O. Box 4310
Lubbock, Texas

CIVIC CENTER CONVENTION COMPLEX
1501 6th Street
Lubbock, Texas

UNIVERSITY NEWS AND PUBLICATIONS
TEXAS TECH UNIVERSITY
Box 4650
Lubbock, Texas

LUBBOCK TRANSIT DEPARTMENT
801 Texas Avenue
Lubbock, Texas

AVALANCHE-JOURNAL
710 Avenue J.
Lubbock, Texas

LIBERTY STATE BANK
6500 Indiana
Lubbock, Texas

AMERICAN STATE BANK
1401 Avenue Q.
Lubbock, Texas

SOUTH PLAINS CHEVROLET
5211 S.W. Loop 289
Lubbock, Texas

FIRST NATIONAL BANK
1500 Broadway
Lubbock, Texas

DEPARTMENT OF HOME AND FAMILY LIFE
COLLEGE OF HOME ECONOMICS
TEXAS TECH UNIVERSITY
Box 4170
Lubbock, Texas

JOE'S COPIES
2420 Broadway
Lubbock, Texas

LUBBOCK CHAMBER OF COMMERCE
14th and Avenue K.
Lubbock, Texas

TEXAS TECH UNIVERSITY
HEALTH SCIENCES CENTER
Box 5980
Lubbock, Texas

BRIERCROFT SAVINGS AND LOAN
5002 Avenue Q.
Lubbock, Texas

RIX FUNERAL HOME
1901 Broadway
Lubbock, Texas

TEXAS HEAD START PROGRAMS
- Executive Directors
- Head Start Directors
- Staff

RETIRED SENIOR VOLUNTEER PROGRAM (RSVP) CONTRIBUTORS

The Retired Senior Volunteer Program (RSVP) at Texas Tech University has contributed to the RESEARCH IN ACTION II Conference in many aspects. We would like to thank them for their assistance, not only for this conference, but throughout the year.

Dr. Gail House
College of Home Economics
Texas Tech University

PIONEER RETIREMENT HOTEL
Anise Bateman
Jane Bickley
Frances Collins
Zada Cross
Velma Godwin
Anna Belle Tucker

PARKVIEW PLACE APARTMENTS
Bertha Adair
Allie Fleming
Lila Mae Gardenhire
May Gardenhire
Squirrel Gardenhire
Bonnie Henry
Frankie Henry
Bayner Hightower
Audie Honeycutt
Mary Lambert
Roberta Lawson
Mary Middleton
Helen Morey
Vonnie Morrell
Thelma Newman
Doreen Pace
Minnie Pace
Ola Mae Powell
Virdie Richards
Billie Viney

Jeri Rieken
RSVP Coordinator

LUBBOCK NURSING HOME
Clara Burnham
Juanita Davidson
Wylie Dykes
Paul Goldstucker
Pearl Goldstucker
Lannie Holt
Ocie Mobley
Stella Pendergrass
Vesta Smith
Petra Solis
Addie Studder
Mary Taylor
Willie Tefteller
Rosel Terry
Evelyn Tipton
James Trussell
Hazel Winona
Bessie Withers

Research in Action II...
Institute for Child and Family Studies Staff

INSTITUTE FOR CHILD AND FAMILY STUDIES
P.O. BOX 4170 TEXAS TECH UNIVERSITY
LUBBOCK, TEXAS 79409

Dr. Mary Tom Riley Director	(806) 742-3296
LaJean Adams South Plains F4. Diagnostician	(806) 742-1945
Ann Beecher Management Information System Intern	(806) 742-1377
Wanda Dyess RAP Computer Operator	(806) 742-3072
Alfredo Flores Bilingual/Research Administrator	(806) 742-3261
Marilyn Horn Training Specialist	(806) 742-3294
E.C. Hurley Research Assistant	(806) 742-1377
Tim Ingram Research Assistant	(806) 742-1377
Amy Jones Research Assistant	(806) 742-1377
Margaret Luera RAP Coordinator	(806) 742-3104
James Mitchell Associate Director	(806) 742-3296
Maryann O'Leary Training Specialist	(806) 742-3294
Maidy Pirtle Administrative Assistant	(806) 742-3296
Trudi Post Secretary	(806) 742-1943
Irma Quezada Associate Director for Training	(806) 742-3296
Viola Sanchez Materials Library Clerk	(806) 742-3295
Yolanda Sanchez Materials Library Clerk	(806) 742-3295
Dale Smith M.I.S. Training Specialist	(806) 742-1377
Regina Swearengen South Plains Consortium Manager	(806) 742-1944
Vincent Taylor Research Assistant	(806) 742-1377
Tim Young Research Assistant	(806) 742-1377

INSTITUTE FOR CHILD AND FAMILY STUDIES
815 EAST 53RD STREET
AUSTIN, TEXAS 78751

Bridget Allen Regional Training Officer	(512) 451-2567
Stuart Reynolds, Coordinator Texas Resource Development Project	(512) 451-2567
Jamie Tucker Project LATON Training Specialist	(512) 451-2567

INSTITUTE FOR CHILD AND FAMILY STUDIES
MAIN TOWER OFFICE BUILDING
1200 MAIN STREET, SUITE 2980
DALLAS, TEXAS 75202

Mary Bucher Health Services Liaison	(214) 741-5386
Phyllis Crawford Regional Training Officer	(214) 741-5386
Cathy Gutierrez North/West Texas CDA	(214) 741-5386
Margaret Guy Health Services Liaison	(214) 741-5386

REGIONAL TRAINING OFFICE
PAN AMERICAN UNIVERSITY
EDINBURG, TEXAS 78539

Arnoldo Benavides South Texas TTA/CDA Project Dir.	(512) 381-2571
Roselva Flores Office Assistant	(512) 381-2571
Raul Martinez Asst. RTO/CDA Field Supervisor	(512) 381-2571

REGIONAL TRAINING OFFICE
3201 WHEELER AVE. TSU P.O. BOX 273
HOUSTON, TEXAS 77004

Stella Henley Training Coordinator	(713) 527-7338
Carol King CDA Field Coordinator	(713) 527-7338
Becky Pena-Hines CDA Field Coordinator	(713) 527-7338
Jeanette Rummel Central Texas TTA/CDA Project Dir.	(713) 527-7338
Frances Schneider Assistant RTO	(713) 527-7338

LEADERSHIP DEVELOPMENT PROGRAM
3201 WHEELER AVE. TSU P.O. BOX 273
HOUSTON, TEXAS 77004

Doris Cox Administrative Assistant	(713) 527-7193
Bernice Evans LDP Project Director	(714) 527-7193
Gudrun Wicklund LDP Instructor	(713) 527-7193
Pat Williams LDP Instructor	(713) 527-7193